THE NEW YORK STATE

conservationist

June-July 1953

STATE OF NEW YORK, CONSERVATION DEPARTMENT

CHAUNCEY STILLMAN FARM

Amenia, N. Y.

Contour Farming: Alternate strips of oats. 1

And hay, good "strip" cropping. 2

Farm Ponds for bass and bluegills. 3

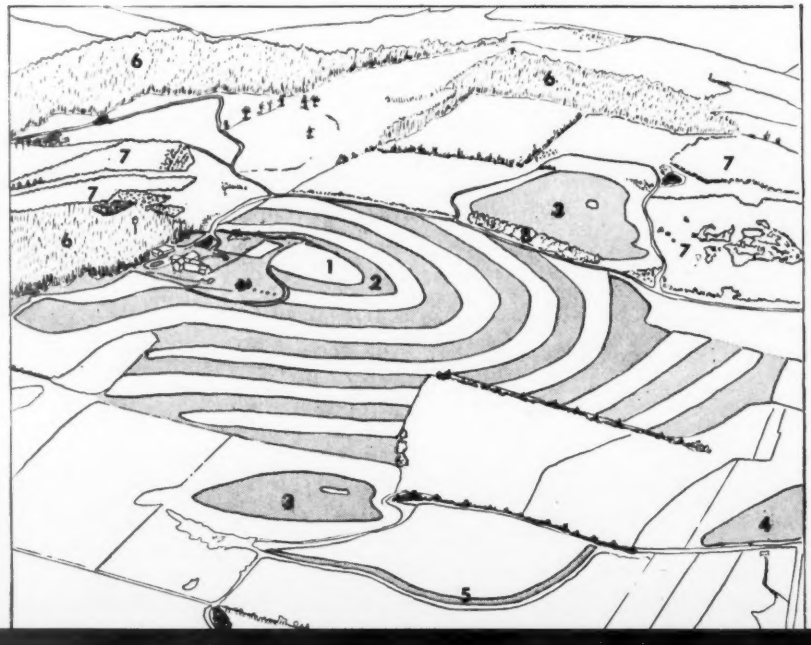
Farm Pond for rainbow trout. 4

Diversion ditch to collect excess water run-off. 5

Farm Woodlots for fence posts, lumber and farm repair. 6

Reforestation areas on poor agricultural lands. 7

Windbreak. 8



THE NEW YORK STATE

CONSERVATIONIST

THE NICE CLEAN DESK

We're taking this opportunity to strike a blow for the *Soiled Collar Worker*, which is what the *White Collar Worker* has now become—provided he hasn't lost his collar along with his shirt.

And we're delivering this blow by exposing one of the most subversive ideas that has ever been foisted off on the American public. We refer to the idea that anybody with a desk (administrator, executive, clerk or even editor) can be judged by the appearance of his desk; if he has a nice clean desk, with nothing on top of it except a memorandum of where he's supposed to have lunch tomorrow, then he's efficient, prompt, admirable, etc. We don't know where this idea got started, but we do know it's time it got stopped.

We have just concluded a careful search, and we have found no such desks here in the Department. In fact the litter and refuse in, on, around and under these desks is something you should see. On second thought, you shouldn't. But the fact remains that most of these so-called working spaces are still loaded with letters (about 1,000 a day to the Albany office), reports required by both State and federal law, case histories on violations, records of Court proceedings, drafts and memoranda on legislation, minutes of meetings, project reports on research and management activities, financial records, fish and game stocking records, news releases, bulletins and brochures.

All that may sound like a lot of red tape. Some of it is. But most of it makes a contribution to the sum total of our knowledge about conservation—which is a good thing because conservation is one of the least known of our modern sciences, and its progress needs recording in black and white.

But to get back to this nice-clean-desk business and the Soiled Collar Worker: If, in our survey of this office, we had happened to find a character with such a nice desk (and, undoubtedly, a nice white collar too), we would have been tempted to ask the following questions and issue the following commands pertaining to the proprietor of this pretty desk:

1. So you have a nice clean desk? So it couldn't be, could it, that you've run out of work? (Aside to the office boy: "Mac, dump another bushel of that stuff in front of this gentleman.")

2. So you have a nice clean desk? So where did all that stuff go? You didn't, by any chance, buck it along to George down the line? And may I examine your wastepaper basket?

3. So you have a nice clean desk? So was there any connection between the *appearance* of your desk and your *disappearance* to get the early bus home?

There is a lot of paper work in conservation. And, unfortunately, somebody has to do it. We have to *put* out what we've *found* out, or we wouldn't get ahead very far very fast. Phooey on the pretty desk; there's work to be done.—Editor

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birds in new york city

*by Robert McCullough**

THE number and variety of birds found in New York City proved most surprising to me. In order to be a counselor for the new Boy Scout Merit Badge in Nature it is important to be better informed than the boys. This proves no small task at times and I spent some of the winter months (which are always good for studying up on things) in improving my knowledge of the birds to be found around the City. The Scouts would complain that we had only robins and sparrows, not to mention pigeons (and I will try not to). I would argue that this was not true, but felt that I needed a little more first-hand information.

With the approach of May, as a result of my research, I find myself not only equipped with all kinds of the desired information through the help of neighbors, the New York Zoological Society and the Audubon Society, but am complete with newly-purchased 7 x 50 field binoculars, bird books, bird feed, bird houses and so on right down to the latest thing in bird calls.

New York City is a wonderful place for finding out things. It seems everything is here for the searching. In the case of the birds, not only was all the material in the way of research available, but interested and informed people as well. Most important of all, so were the birds.

Between the City blocks there are many yards that lots of people never see or suspect. I don't have a yard myself, and wanted to find out what goes on in one with regard to wild birds. In this the boys were of no help, as none of them had a yard of the type I wanted to know about. But Mr. N. S. Olds (of our neighborhood publication, The Villager) put me in touch with Dr. Charles Sibley on West 12th Street, a long-time Greenwich Village resident who kept a record of the birds he saw in his back yard. His house is between two main thoroughfares, Sixth and Seventh avenues, with subways rushing under both. Tall apartments have arisen around it.

That this little patch of greenery in the heart of the City could produce such a list of birds (and here is the list) seems hard to believe. Perhaps for this reason Dr. Sibley took a picture of a Wilson snipe he saw out there one morning. His records covered a number of years, so were particularly interesting. This list is not for any particular year, and is just to show the variety and dates of appearance. Some of the birds were noted in his bird books, others on prescription blanks, and for a few years he had more detailed notes with all the birds he saw in his yard each day.

Mar.	*21*	*Song Sparrow*
Mar.	*22*	*Fox Sparrow*
		Junco
Mar.	*24*	*Winter Wren*
		Hermit Thrush
		Worm Eating Warbler
Apr.	*10*	*House Wren*
Apr.	*11*	*Phoebe*
		Black and White Warbler
Apr.	*27*	*Robin*
		Flicker
May	*1*	*Towhee*
		Oven Bird
May	*2*	*White Throat Song Sparrow*
May	*3*	*Wilson Warbler*
		Blue Jay
May	*4*	*Parula Warbler*
May	*5*	*Prairie Warbler*
		Rose Breasted Grosbeak
		Field Sparrow
May	*11*	*Baltimore Oriole*
		Cerulean Warbler
May	*14*	*White Breasted Nuthatch*
May	*15*	*Veery*
May	*22*	*Yellow Warbler*
		Chipping Sparrow
May	*27*	*Chestnut Sided Warbler*
		Hooded Warbler
May	*28*	*Pine Warbler*
		Magnolia Warbler
May	*29*	*Black Crowned Vireo*
May	*30*	*Wood Thrush*
June	*14*	*Yellow Billed Cuckoo*
July	*10*	*Cardinal*
Aug.	*15*	*Bachman Warbler*
Sept.	*3*	*Lesser Flycatcher*
		Summer Tanager
Sept.	*9*	*Blackburnian Warbler*
		Sapsucker
Sept.	*13*	*Ruby Throated Hummingbird*
		Gray-cheeked Thrush
Sept.	*23*	*Prothonatary Warbler*
		Philadelphia Vireo
Oct.	*11*	*Ruby Crowned Kinglet*
		Brown Thrasher
Nov.	*6*	*Redstart*
		Golden Crowned Kinglet

To recount one of Dr. Sibley's stories of birds around the City, I will have to mention pigeons again. Noting feathers floating down to the street one day at Broadway and 72nd Street, the source proved to be a hawk disposing of a pigeon on a flagpole. In order not to be removed from the list of bird lovers I guess I will have to say that pigeons afford small children as well as grown people great delight in feeding them.

*This is the second article that Mr. McCullough (Head Bartender in the Racquet and Tennis Club, N. Y. C.) has written for us. The first was "The Trees in Washington Square," Aug.-Sept. '52.

The people in Greenwich Village fly them in great numbers from many rooftops. The idea often seems to be to capture the other fellow's pigeons and sell them back with great glee. Certain people consider them a table delicacy. It cannot be denied that they are a handsome bird, descendants of the wild rock dove of Europe, and I suppose they have to be included in New York City bird life. They are a bit untidy and over-abundant, but I will not disclose any further personal feelings regarding them.

Between talks with Dr. Sibley I spent many cold days in Central Park and Washington Square Park verifying that the birds reputed to be around were on the job. If I was early enough and had patience I would be rewarded. The Ramble, an area in Central Park not far from the American Museum of Natural History, was usually the most rewarding. In a publication of that institution, Geoffrey Carleton states that the largest Christmas census was twenty-four species on December 30, 1945. I saw twelve one winter day within a short time. On that particular day the chickadees stole the show with all kinds of clowning around. Evidently they performed for my benefit, as it was too early and miserable for anyone but an inspired bird enthusiast to be out.

Back in the warmth of Dr. Sibley's study, he would get me all steamed up again with more bird stories: About the great horned owl that he and an associate once watched for regularly at 61st Street and Central Park West, or perhaps about a flicker eating baby ants in his yard. We talked about the eagles above the George Washington Bridge. That caused me to remember that when I first came to New York I was one of a crowd that gathered around while a policeman sent someone to call the A.S.P.C.A.; an eagle had fallen into the street at 6th Avenue and 38th Street and was flopping around menacingly. No one knew just how he got there or what was the matter with him.

And we talked about the many different birds that struck the Empire State Building some few years back. When I went home that night I wrote to the New York Zoological Society asking about this incident and other New York City bird information I wanted to have. The reply from Grace Davall, Assistant Curator of Mammals and Birds, was very helpful and informative. She wrote in part: "We have no printed report of the Empire State Building disaster, which occured early on the morning of September 10, 1948. Presumably attracted by lights glowing in the dense fog that prevailed, birds struck building and windows, falling to the streets in scores. A number were brought here still living and were thus saved, while many that perished were preserved at the American Museum of Natural History. Following is a composite list of involved species noted by our two institutions":

(This list seemed most surprising to me. It will be noted that there are twenty-four different birds and of a variety that one would hardly expect to find in the vicinity of the tallest building in the world, even by accident.)

Nashville Warbler
Blue-Winged Warbler
Ovenbird
Northern Water-Thrush
Black and White Warbler
Magnolia Warbler
Yellow-Throat
Redstart
Cape May Warbler
Chestnut Sided Warbler
Bay-Breasted Warbler
Tennessee Warbler
Canada Warbler
Yellow-Breasted Chat
Connecticut Warbler
Black-Throated Blue Warbler
Blackpoll
Prairie Warbler
Worm-Eating Warbler
Red-Eyed Vireo
Baltimore Oriole
Rose Breasted Grosbeak
Veery
Bobolink

The books recommended to me disclosed that Central Park lists some 225 species of birds observed there. Not many places in the entire country surpass this record. Twenty-four species of warblers alone were seen on May 14th, 1944, and the greatest total for a single day is 78—on May 10, 1927. Lee S. Crandall, recently retired General Curator of the Zoological Society, wrote a story for *Boy's Life Magazine* "Birds Astray" concerning unusual birds in this area. Of particular interest was the account of the dovekie invasion in November, 1952. These little auks (that belong up in Greenland and Iceland) were all over the place and caused quite a sensation at the time. She stated that the best places to observe birds in addition to Central Park was the vicinity of the Bronx River in the Botanical Garden and parts of Van Cordlandt Park.

Since declaring my interest in birds, I have been provided with many news items concerning them that I may have missed. Proving that birds are news here are some of the notices in New York papers lately:

September 25, 1952—"Barn Owl Takes Room in New Yorker Hotel, Gets Turned Over To Central Park For New Accommodations."

December 19, 1952—"Christmas Trees For Birds Appearing In Many Spots Around City. Loaded With All Nature Of Bird Delicacies, They Are Attracting Cardinals, Chickadees, Nuthatches, Downy Woodpeckers And Many Types of Sparrows."

February 9, 1953 — (Front Page) "Hundreds of White Wing Crossbills Reported In New York and New Jersey."

February 14, 1953—"Ten Evening Grosbeaks Reported From Brookhaven, L. I."

February 18, 1953—"Western Tanager Seen In New York And New Jersey" (usually travels the West Coast from Canada to Mexico).

February 20, 1953 — Front Page again—"Towhees Seen In New York Suburbs."

February 26, 1953—"Two Redpolls Stowaway On Cruise Ship." The birds were blown aboard the cruise ship after it left New York on its way to South America. They will make the cruise and be brought back to New York, a little closer to where they belong—in Canada.

As I finish this little account, the current story is about the Canada goose that couldn't get off the Connecticut lake to make the trip to Canada because it was crippled. The other geese tried to help. This reminded the *National Geographic* of another crippled goose that couldn't make the trip flying and started out to walk. "Her mate, though perfectly able to fly, chose to walk by her side." To bring New York City back into the story, the Reservoir and lake in Central Park (as well as the pond at 59th street) contribute a good list of water birds each year.

For some reason I have an aversion to being called a bird watcher, and hope nobody calls me one, even if I am. Along with millions of other people it looks like I am destined to spend most of my life in the Big City. Therefore I will have to make the most of what Nature has to offer in my immediate surroundings. I have been greatly enlightened along this line with regard to birds. Also I have an increased respect for the contribution they make to our standard of living and a healthy and happy land.

WE are now in the third year of the salvage operations necessitated by the "big blow" of 1950. We have reached an extremely critical stage in these operations. During the first two years, progress was very satisfactory since there was an urgent demand for pulpwood and the paper mills of this State were operating on a full time basis. But in 1952 there was a decided decline in the demand for pulpwood, due in part to the lack of paper outlets and in part to the fact that most of the mills in the State were over-stocked with pulpwood as a result of the salvage operations. Furthermore, the large over-run in the estimates of down timber has also affected the progress of the operations, which is very well illustrated by the fact that while only approximately 40 per cent of the area originally estimated as needing treatment has been covered by salvage operations, over 80 per cent of the original estimate of down timber has been removed. This point may be further illustrated by the fact that on the areas covered by the 135 contracts now in effect, 209,000 cords of pulpwood have been removed, while the original estimate of the down timber on these areas was 233,000 cords.

The following tabulation shows the status of the salvage program as of March 1, 1953:

	Executed Contracts	Unsold Contracts	Total
Number of projects	135	32	167
Acreage	106,528	69,580	176,108
Cords	233,021	238,525	471,546
MBF	30,381.5	10,445.0	40,826.5
Estimated receipts	$1,030,517.35	$840,136.25	$1,870,633.60

The actual quantities cut and scaled, and the total receipts to March 31, 1953 are as follows:

	Cords	Receipts
Softwoods	209,122.25	$677,397.07
Hardwoods	548.63	1,072.28
Total pulpwood	209,670.88	$678,469.35
	MBF	**Receipts**
Softwood sawlogs	16,729.281	$129,338.33
Hardwood sawlogs	9,187.483	103,602.46
Total sawlogs	25,916.764	$232,940.79
Total sawlogs and pulpwood		$911,410.14
Local sales		72,011.27
Total cash receipts		$983,421.41
Campsite salvage (estimated value)		48,480.00
Salvage, State (1,250 MBF @ $85 MBF)		106,250.00
Grand Total		$1,138,151.41

The Department in its efforts to expedite the salvage operations is now faced with market, spoilage and legal problems which should be mentioned at this time:

Spoilage

During the past year there has been a decided increase in the deterioration of the blown down timber due to decay and insect damage. Most of the balsam and hardwoods are now past the stage where they can be considered merchantable. The down hemlock, due to inade-

The Press and Journal

A Survey by 'The Press and Journal' Reveals for the First Time the Gale's Full Havoc

NORTH FORESTS DEVASTATED ALMOST BEYOND BELIEF

Damage of Three Million Pounds

Aberdeen Woman's Ordeal in Holland

LATE NEWS

WHAT CAN BE DONE?

Mau Mau Gang Murder Argyll Farm Manager

ACCORD ON SUDAN LIKELY THIS WEEK

MACVITA

SALVAGE REPORT (12)

Lancelot O'Neil. The River Ure and the house can be seen on the North bank of the

ER HEAVILY

Pope Advised to Work Less

Cyclist Injured in Road Mishap

quate markets, large size and poor quality can no longer be considered merchantable. This leaves one species—namely spruce—that can be depended upon as a merchantable product on the majority of the blown down areas.

Markets

As previously stated, there is only a limited demand for pulpwood at the present time. While the market for sawtimber is still fairly good, we cannot depend upon this industry to remove any *substantial* amount of down timber, since the saw mills in this State are small, relatively few in number, and their total consumption is not sufficient to offer a solution to our present problems. However, every effort is being made to encourage saw mills to participate in the program, and some progress has been made along these lines.

Legal

Due to the increase in non-merchantable material located on contract areas, mostly resulting from spoilage, many of the present contractors are faced with an increase in cost of operations which places them in an unfavorable position in a competitive lumber market. If they are to continue salvage operations, some relief must be granted them. In an effort to meet this need, the Department has waived some of the present contract restrictions dealing with the piling of brush and the lopping of unmerchantable trees to the terminal bud. But there are certain legal problems involving existing contracts which must also be solved, and the Department has had several conferences with the Department of Law, the Division of the Budget and the Comptroller's office with the result that real progress has been made toward the satisfactory solution of some of these problems. There still remain, however, some legal problems which cannot be solved on a collective basis and which may necessitate special consideration by the Department of Law. These problems will be given due consideration as they arise.

This Department is aware of the fact that some drastic changes are needed in its present policies governing operations if we are to cope with the present emergency. During the past few months, representatives of the Department have met with the Forest Preserve Committee of the New York State Conservation Council and the Executive Board of the Society for the Protection of the Adirondacks, for the purpose of discussing present problems and proposed solutions. It seemed to be the concensus of these groups, as well as that of the Department, that the primary objective of the salvage program must be the reduction of the fire hazard, and that every effort should be directed toward the protection of these areas from fire. In order to accomplish, this, the Department is in the process of contacting all of the present contractors to determine what can be done to reduce their burden in order that they may proceed more effectively with their contracts. It is also endeavoring to enlist the assistance of operators who have not as yet participated in the program. It is felt that by waiving some of the present contract restrictions pertaining to the disposal of brush, etc., more contractors might be interested in participating in the program.

We may as well face the facts: It is no longer possible to remove the majority of the down timber from these areas, which of course means there will be an increase in the amount of debris left on the forest floor. However, the creation of access trails in the blowdown areas resulting from the salvage operations will provide a means of penetrating these areas in case of fire. The closing of the areas to public use for an indefinite period would assure some protection against fire, but we cannot overlook the fact that a certain number of fires are caused by lightning, and that unless these fires can be promptly detected and extinguished, there is grave danger that a catastrophe may result. The logging roads, skid trails, etc., created by the lumbermen provide not only a means of access, but tend to break down the areas into smaller parcels and provide routes for the construction of fire lines.

Under existing conditions, it is quite evident there will be certain areas on which no contracts will be let for the salvaging of the timber. In such cases it will be necessary to develop specific fire control plans which will offer a maximum amount of fire protection under existing conditions. Access trails and roads will have to be constructed with Department forces within these areas, and they will have to be maintained as long as a fire hazard exists.

From the beginning of the salvage program, the Department's first concern has been that of reducing the fire hazard on the blow-down areas. While the financial returns resulting from the operations to date have assisted materially in carrying out the program, these financial returns have never been considered of primary importance. The Department's efforts will in the future, as in the past, be directed toward providing the best fire protection possible.

—W. M. Foss,
Director, Lands & Forests

FISHING, WITH AN ANGLE

Dear Editor: Perhaps your readers would be interested in a vivid illustration of the timelessness of conservation principles which I recently read in the concluding paragraph of "Treatise On Fysshynge With An Angle" written by Dame Juliana Berners of England in 1496. The following quotation is from the translation from the Middle English by William Van Wyck, published by the Van Rees Press:

You who can angle and catch fish at your pleasure, as the above-written treatise teaches you, I charge in the name of all noble men, not to fish in a poor man's privately owned water, such as his pond, his stew, or other necessary place in which to keep fish, unless you have obtained his good will and permission. . . . If you take his goods away, you rob him, which is a right shameful deed for any noble man to do, and one worthy of thieves and beggars who are punished for their evil deeds by being hanged by the neck, or in other ways, when captured. Also if you act in the way that this treatise instructs you to, you will have no need to take another man's fish, since you will have enough fish of your own catching, if you pay attention to what has been told you. And it will be a great pleasure to you to see the good, bright, shining fishes that have been deceived by your skill and dragged to shore.

Also see to it that you break no man's hedges in going about your sport, and see to it that you open no man's gates without shutting them again. Also you must not use the above-mentioned skillful sport to increase or save your money through covetousness, but chiefly for your pleasure and to render your body healthy and particularly your soul. For when you purpose to be about your sport of fishing, you will not greatly desire to have many persons with you who might keep you from having your pleasure. And then you may serve God devoutly in saying efficaciously your customary prayer.

Also you must not be greedy in your catch, so as to take too many fish at one time, which you may do unthinkly if you act according to these instructions, which will cause you to destroy your own sport and that of other men, as well. And when you have caught a sufficient number of fish, you must busy yourself in furthering the sport in every way that you can, and to destroy anything that tends to lower its morale. And all those who act according to this rule shall have the blessing of Saint Peter and of God who has redeemed us with His Precious Blood.

—John A. Hanawalt, Massapequa

Weakfish Study on Long Island

New York pioneers on the Atlantic Coast in a Dingell-Johnson Research Study on a great saltwater game fish.

DOWN East it's *squeteague;* in the South, *sea trout;* but here in New York *weakfish* is the name. The weakfish, *Cynoscion regalis,* is one of the best known members of that cosmopolitan family of fishes, the Sciaenidae, which also includes the croakers, drums and channel bass. It is found in greatest numbers from New York south to the Carolinas, and along this range is eagerly pursued by both the commercial and recreational fishermen.

Weakfish are caught by anglers at numerous localities along the Long Island coast from early in May to October. In New York, however, the bulk of this species is taken by the recreational fishery from two areas, the Peconic Bays and Great South Bay. In the Peconic Bays, schools of weakfish appear early in May and congregate there until July, while in Great South Bay the recreational fishery for weakfish is at its best from July to September. During the season thousands of fishermen aboard private charter and party boats follow the schools attracting the weakfish to their lures by casting ground bay shrimp on the waters; a process called chumming.

For the past several years there has been a marked decline in the abundance of weakfish along the shores of Long Island. This is reflected in the commercial catch of the species, which dropped from about 1½ million pounds in 1947 to 161,000 pounds in 1952, the lowest catch in the recorded history of the fishery.

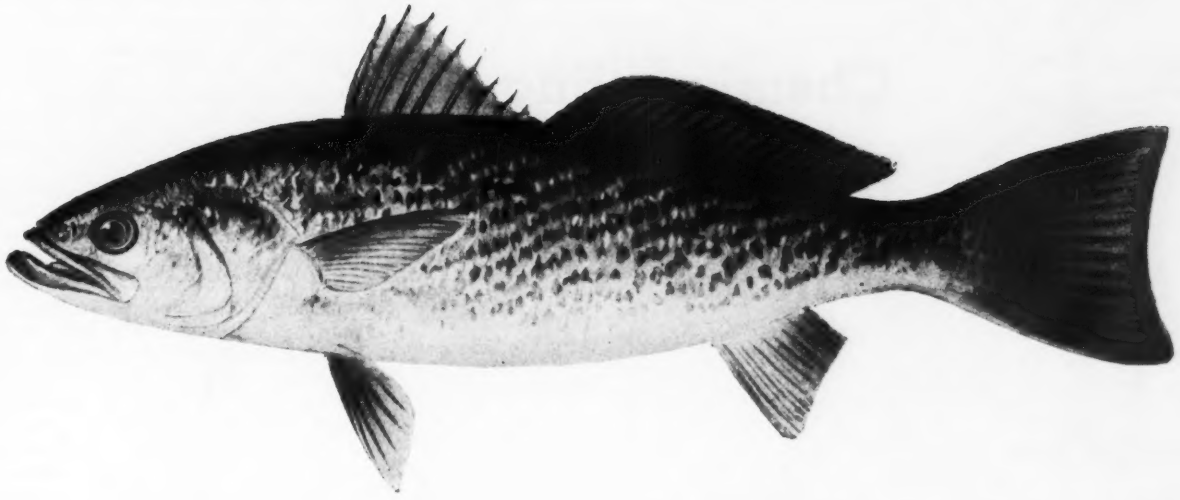
The decline of this "million dollar" fishery is of natural concern to the New York Conservation Department and even more directly to the thousands of anglers of the Metropolitan and Long Island area. To find out, if possible, the reasons for the decline of the weakfish and, even more important, to develop management measures designed to bring about a recovery of the fishery, an intensive study has been started in the Peconic Bays and Great South Bay areas. Three quarters of the expense for this investigation are provided by the Federal Aid in Fish Restoration under the Dingell-Johnson Act.

As you read this article, Conservation Department Boat No. 3 is cruising about Long Island shores seeking data on the weakfish. During the past winter it was fully equipped as a fishery research vessel suitable for inshore work, particularly in bays. A 15-foot mast was added for use in setting and raising experimental trawl nets. A double drum winch was placed amidship and from it the towing wires lead to a davit on the starboard side. From this davit special plankton nets are towed, and equipment for taking water samples and bottom samples are lowered. An echo sounder, installed near the instrument panel in the pilot house, automatically records on a tape the depth of the water and the presence of schools of fish.

But our research work in the Long Island waters may best be described by outlining a typical day's activities at one of a series of stations. Upon arrival at the station, time, tide, and direction and velocity of wind are noted. Depth (as shown on the echo sounder) is entered in the log book. A 20-pound weight is attached to one of the towing wires and three feet above the weight a special water sampler is snapped on the wire. The water sampler is essentially a hollow metal tube of a corrosion-resistant metal which can be closed off at both ends at any time. Thus, it is possible to bring to the surface water samples from any depth and test their salinity or other chemical or physical properties on the boat or in the laboratory. Attached to the special water sampler are two deep-sea reversing thermometers. These instruments are specially designed to obtain the temperatures of the water at any desired depth.

As a result of the above operation water temperature is procured at the bottom of the bay, and the water sample obtained from the level is tested for salinity. Temperature of the surface water is measured with a surface thermometer and salinity is also tested. (In our studies, salinity is determined by means of hydrometers which measure the specific gravity of water.) Meanwhile, transparency of the water is being observed by use of the Secchi disc—a white, circular disc of metal four inches in diameter with a hole punched in its center. A cord is strung through the hole, and the disc is lowered over the side of the vessel; the depth at which the disc becomes invisible is an index of the transparency of the water.

The next step is the attachment of a plankton net to the towing wire, again three feet above the bottom lead. The plankton net is a cone-shaped affair, 39 inches in diameter at its mouth, and is



attached there to a brass ring. It is made of a special silk bolting cloth with very uniform openings and measuring 54 meshes to the inch. This extremely fine mesh will retain even the smallest fish eggs and larval fish. Across the mouth of the net is a counter-type flow meter which is used to measure the volume of water flowing into the net. By this means, it is possible to compute the number of gallons of water filtered by the net, and thus to determine the density of the various species of eggs or larval fish at any station at any given time. The plankton net is towed for 10 minutes at each station. To assure complete coverage of all depths of water, the 10-minute tow is divided into five tows, each two minutes in length at equidistant intervals starting from the bottom and ending at the surface of the water.

The fish eggs and larvae (as well as other animals) collected in the plankton net are preserved and later, at the laboratory, are identified, measured, and counted. Next, a Petterson dredge, which is similar to a small clam bucket, is lowered over the side arm and a chunk of the bottom is brought to the surface. This material is then screened —first through a one inch, then a half inch, and finally a sixteenth inch sifter— and all living organisms obtained are placed in jars and preserved, to be identified and counted at the laboratory.

A modified otter trawl is next used. This trawl, which we call the young fish trawl, has a mouth spread of six feet and a mesh size of a half inch. Its primary purpose is to capture the larger larval and smaller juvenile fish, mainly those from a quarter to two inches. It is towed for 20 minutes, and again all fish captured are preserved, and counted, and are measured later at the laboratory. Finally, a larger otter trawl with a spread of 15 feet and an inch and a half mesh is towed for 20 minutes to catch larger fish—for example, 5-inch to 8-inch weakfish, which represent the young of the year, or even adult weakfish over 12 to 14 inches in length. These fish are measured, scale samples are taken for use in age studies, and they are tagged and released. From recovery of these tagged fish, information is obtained on movement of the weakfish, as well as the proportion of the population being caught.

The program (as outlined above for a single station) is carried on at 14 stations throughout the Peconic-Gardiner's Bay area, and nine stations in the Shinnecock-Moriches-Great South Bay area. The Gardiner's Bay area and the Shinnecock-Moriches-Great South Bay area are visited on alternate weeks.

Aside from the information gathered by the research vessel, other biological data on the weakfish are also collected. Samples are taken of the size and sex composition of the commercial and sport catches throughout the Island. Reproductive organs are preserved and studied in the laboratory to determine the potential spawning capacity of the species as well as the size at maturity of both the males and females. Additional information on the latter subject is recorded in the field. Scales are collected for use in computing the age and growth of the fish. Finally, whenever weakfish are available in quantity, they are tagged to determine the fishing intensity, the comparative quantities of fish that are being caught by our fishermen (and fishermen in other states along the coast), and to plot movement and migration of these fish.

All our work is dependent to a large extent on the good will and assistance of both the recreational and commercial fisheries. We will need the help of the sport fishermen to get measurements of the fish in their catch. It may also be necessary to call on them to furnish fish caught by hook-and-line for tagging experiments. The commercial fishermen can assist by informing us of runs of weakfish in their individual areas and permitting us to take biological data on their catch.

WE appreciate the assistance of the recreational and commercial fishermen, and are looking forward to their continued help. We have reason to hope that such assistance, coupled with this intensive study of the weakfish, will lead to sound management developments and the ultimate recovery of this valuable fishery in our waters.

If our hopes are realized the magic words—"The weaks are in"—will once again flash over the fishermen's "grapevine" and the famous waters of Great South Bay, the Peconics and Gardiner's Bay, all one-time weakfish heavens, may once again furnish the kind of fishing of which dreams are made.

—ALFRED PERLMUTTER,
Sr. Aquatic Biologist, Marine District

Chemi-peeling and Wildlife

CHEMI-PEELING is a relatively new technique for getting the bark off standing timber as a preliminary to its harvest for commercial use. In THE CONSERVATIONIST, two issues ago, the latest method was described in some detail. Briefly, it involves the application of a solution of sodium arsenite to a freshly-peeled girdle around a tree trunk. As with any new method, there is much still to be learned about its effects upon the forest and upon forest wildlife, large and small.

When word gets around that we foresters are "spreading poison" through the woods, those who are interested in wildlife become apprehensive lest we kill off a lot of birds, mammals and fish. Certainly, they have a right to be concerned and to ask just how big the hazards are. And in answer, we professional conservationists have an obligation to tell the whole truth as best we know it.

There is no question but what sodium arsenite is poisonous. Its use is always fraught with some danger. The questions are how much danger, and to what. In streams, a high enough concentration will kill fish; lower concentrations may drive fish out by destroying the insects upon which they feed. But the introduction of that much chemical could come about only through carelessness (as from accidental spilling directly into the stream) or by someone washing a pail or brush in a brook. These possibilities seem to be exceedingly unlikely and can easily be avoided by proper training. The pollution hazard to fish from chemi-peeling would be very small.

To injure birds, the arsenite would first have to be taken up by insects or other life forms upon which the birds would feed. So far, the only creatures which have been seen on treated girdles are slugs and certain wood-boring beetles which are not attractive to birds, even to woodpeckers. That reduces the chance of harming birds almost, if not quite, to the vanishing point.

But sodium arsenite will kill mammals—and it does not take very much to do it. Foresters and others have been using this compound in various ways for the past 30 years. Treatment according to the system developed by the late Josh Cope at Cornell often resulted in considerable spillage and so in considerable danger. Yet, in spite of wide use over a long period, we never heard of any mammal but deer being killed—and *only two* cases of that. These were in connection with some experimental work on tree-deadening and were definitely not conducted according to the Cornell system. Seven deer at Bear Spring Mountain and three at Pharsalia quite certainly picked up fatal doses of arsenite on tree-killing jobs. The Cope method called for treatment in late summer, whereas both these operations had been done in late April. At that season, every treated cut bled sap, which mixed with the arsenite and oozed out onto the bark. The technician who did the work believed that the deer had been attracted by the flowing sap, and got the arsenite incidentally.

Every poacher knows that, from spring green-up until the first hard frost, deer have a craving for salt, which is sodium chloride. Some people have contended that *all* sodium compounds are attractive, arsenite included. The chemists now tell us that, to humans, arsenite has a soapy, not a salty taste; how it tastes to a deer is not known. Preliminary evidence from a current and still unfinished Conservation Department study indicates that arsenite is not particularly attractive to deer. As yet, there is no sound experimental evidence to show that deer like the taste of arsenite.

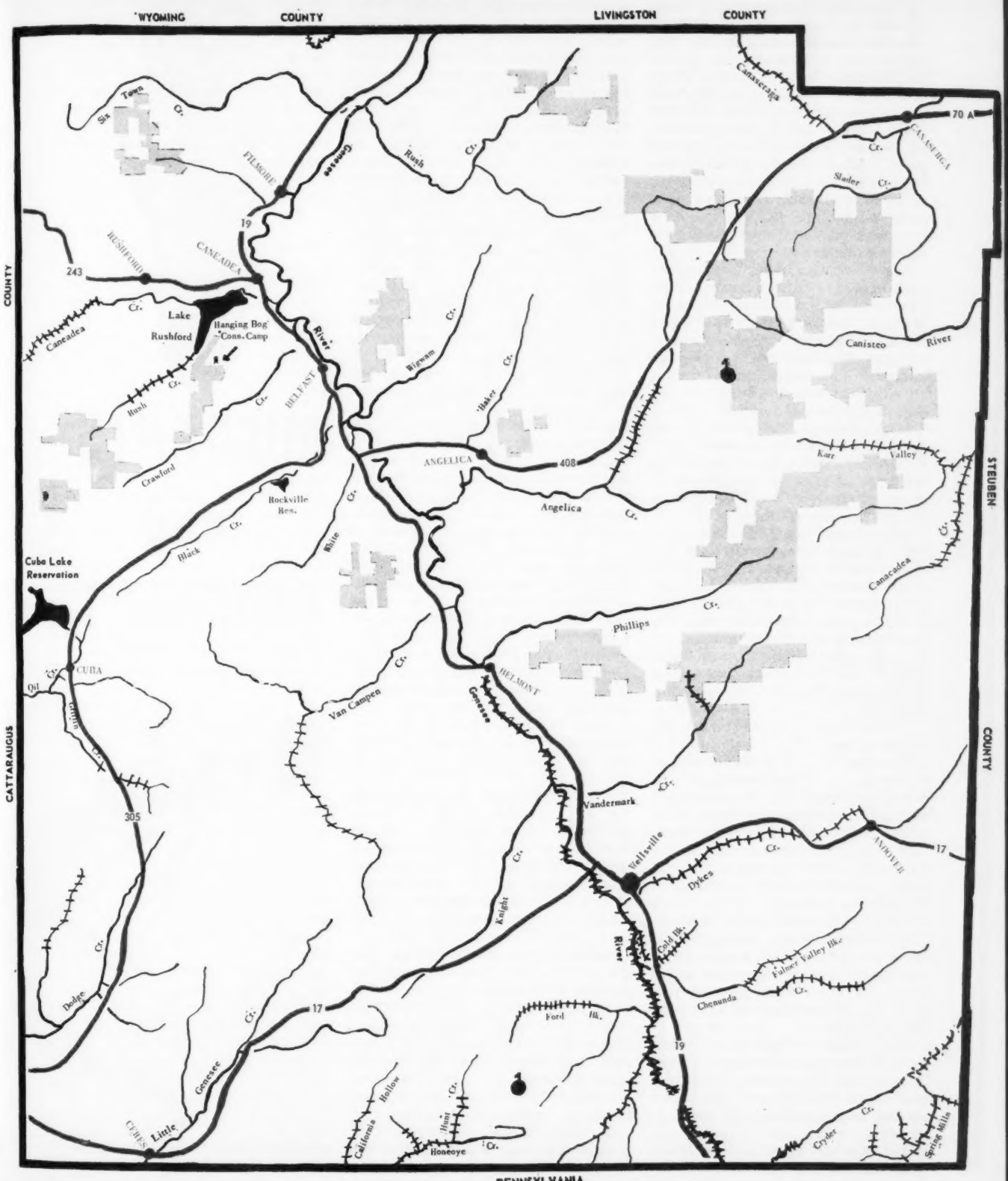
Certainly there are ways of handling arsenite that are dangerous. But the professional woodsmen who do chemi-peeling are very careful, not only because of the hazard to wildlife but even more because of the danger to themselves. Whatever may have been the risk with other, older systems, the Armstrong technique described in a previous issue (and now the generally accepted method) seems to present no real hazard to wildlife. The freshly peeled girdle is painted with debarking compound, from which the arsenite passes quickly into the wood. The water evaporates, so that the wood is dry within a couple of hours. To get any appreciable amount of arsenite, a deer would have to lick a good many trees right after treatment—and lick them vigorously, too. It is hard to believe that any normal white-tail would return to a treated area that soon after a chemi-peeling crew had passed through.

So far, almost all our evidence of danger to wildlife is negative. In New York, there has been but one proven case of mortality in deer and not a single case of bird or fish coming to an untimely end as a result of chemi-peeling operations by the Armstrong method. Even on the Huntington Forest at Newcomb, where intensive research in chemical debarking has been in full swing for two seasons, nothing untoward has been observed, even though the local deer herd is a big one.

Now, the only positive way to determine cause of death in wildlife is by autopsy. If a sick or dead deer or other creature is found in or near a block of timber that has been chemi-peeled, this *does not necessarily* mean that the victim has gotten mixed up with sodium arsenite. In fact, the chances are about a thousand to one that the easy answer is the wrong one. Circumstantial evidence has to be very, very good to be convincing. So, if you find a defunct deer this spring that seems to have become involved with a chemi-peeling job, don't jump at conclusions. Rather, jump to a telephone and report it immediately to your Game Protector or other Conservation Officer.

—DAVE COOK

ALLEGANY COUNTY



MIGRANTS and EMIGRANTS

by W. J. Hamilton, Jr.
Cornell University

THE rigorous winters of New York State often spell hardship to many animals. Like so many of our birds, some mammals must flee the hostile months of snow and ice, or else they must pass into the profound state of hiberation. To be sure, most of our native animals are inured to the bitter cold of winter, and manage quite well to provide for themselves during this period. Many of our fur animals, the rodents, rabbits and others are active in the most bitter days or nights when snow and ice locks the land but there are others that must move to a more amenable climate.

Some years ago, while observing the shore birds on Cayuga Lake, I made some notes on this migratory behavior. Scores of sandpipers, plovers and ducks had taken up temporary residence, fattening on the abundant food in preparation for a southward journey. In the late afternoon, bats were flying overhead in a southwesterly direction. These were the migrants, the several species that do not resort to our northern caves. They were headed I don't know where, but presumably to the southern states, where insects would be abroad part of the winter to sustain them.

In our coastal waters, whales (seldom seen by most of us) make periodic movements, occasionally entering Long Island Sound. Off Montauk Point, at the easterly tip of the Island, these leviathans migrate periodically along the coast, moving with some regularity, for the food supply of these great beasts depends in a measure on water temperatures, and their food is never constant in any area.

We should differentiate between *migration* (a term rather loosely applied), and *emigration*. A migratory animal is one which makes a periodic departure from—and return to—a region at particular seasons of the year. It is best marked with birds, but many mammals, frogs, salamanders, snakes, fish and insects exhibit this pattern of movement. Emigration, often confused with migration, is a desertion of the home territory by an animal which shows no disposition to return to its point of departure. The so-called migrations of squirrels are truly *emigratory* movements, for the animals take up residence in a site well removed from their former habitat.

Occasionally we learn of a marked increase of an animal. Letters to the Conservation Department are not infrequent on this score, and the writer also has ample testimony on this matter of mass movements. Not long ago, Willet Randall, operating the North Creek Wildlife Refuge, indicated a sizeable movement of muskrats; the 'rats left a pond near his refuge and moved across a nearby hill, crossing a highway; while enroute at least a dozen were killed. (This specific occurrence really prompted the present discussion.) Why muskrats take off and leave a favored homesite is hard to imagine, but the possible reasons will be discussed later. We *do* know that this rodent will often desert its home territory in search of a new site. They may move for the purpose of finding a more congenial environment, the result of overpopulation of the 'rats in an area that they occupy too fully, or for other reasons which we simply have not been able to discover.

Actually, the mass movements of animals from one area to another have excited newswriters for many years. Some readers will recall the great westward exodus of gray squirrels in 1933. A thousand or more squirrels were observed swimming the Connecticut River between Hartford and Essex, a distance of about 40 miles. Many became exhausted and drowned, while others climbed up on logs or driftwood on which they rested while the flotsam carried them down the river. When these squirrel multitudes reached eastern New York and approached the Hudson, some came aboard ferry boats, while not a few scampered across the bridges that span the river. All were moving in a westerly direction. Two years later, in favored territories, an even more extensive movement of gray squirrels was noted, the emigration extending into western New York; squirrels were seen in areas where they had been scarce for many years.

With the approach of fall, the bare woods of November disclosed incredible numbers of the leafy nests, hastily made by the hordes. Thousands were killed by cars (there was less traffic than presently), while multitudes were drowned as they attempted to swim the large lakes of the central and western part of the State. But the following year, few gray squirrels were present. Where they went or how they fared, no one will ever know.

FRIEND Frank Haseltine, of the Vermont Fish and Game Service, has provided information on a pronounced movement of gray squirrels in September, 1951. Frank relates how John Pepper, tollman on the New York side of the Lake Champlain Bridge, observed large numbers of gray squirrels crossing the bridge day and night. Crowds came merely to witness this movement, a man being detailed each morning to remove the dead squirrels from the bridge. The Vermont road, both north and south of the bridge, was littered

with dead squirrels. The caretaker of the State Park at the bridge observed large numbers of dead squirrels on shore all through the latter part of September. (The only one he actually saw swimming landed on the New York shore line, took a look about and jumped back in, heading for Vermont. Haseltine assumes this was one of the more intelligent individuals.) In brief, these squirrels appeared in large numbers during September, the movement lessening markedly in early October and ceasing entirely in November.

A CENTURY ago, the spectacular emigrations of the gray squirrel were recorded by many. These mass movements were well known to historians, who cited their occurrences but gave no reason for them. Thousands perished in the great treks, and rivers and lakes in the way of their travels were windrowed with dead bodies. New York's greatest naturalist, Dr. C. Hart Merriam (who relinquished a medical practice to organize the United States Biological Survey), adds much information on these matters. Merriam records the 1749 squirrel invasion of Pennsylvania in which the great squirrel hordes endangered the crops of the inhabited portion of the state—at that time rather limited. A reward of three pence a head was offered for their destruction, necessitating payment on 640,000 squirrels. Pennant, of Arctic zoology fame, wryly remarked: "How improved must the state of Americans then be, in thirty-five years, to wage an expensive and successful war against its parent country which before could not bear the charges of clearing the provinces from the ravages of these insignificant animals." Presumably Pennant was not aware of the difference between the bounty system, a wasteful expenditure of money at best, and the measures that should properly be taken for defense of one's country.

FEW animals are so well known to us as beaver. A dammed stream, providing a suitable depth of water, insures a lodge, a sunken food pile of aspen and other branches to last throughout the period when ice caps the pond. The parents, secure in the lodge, provide a sanctuary for the several young and the yearlings that stay in the family cloister until they have attained breeding age. But when two years old, the sub-adults are ousted from the home pond and must then shift for themselves. They emigrate, moving to new quarters removed from the parent colony or home lodge. They may, perforce, take up residence in the same pond if it and the nearby food is sufficient to meet the needs of a larger colony, but more often these discards select a home well removed from the place of their birth; occasionally they travel miles to establish a new residence well removed from the natal chamber. The two-year beavers are emigrants, as surely as those of us who have left Europe to establish a home on this side of the Atlantic. We have seen individuals or pairs establish a residence in ponds at least 30 miles from the nearest colony.

And all of us are familiar with the rat, one of the greatest plagues of mankind. Scores of observers in the past century attest the mass (emigratory) movements of this pest, and few will deny its depredations. On careful thought, one will realize that most of the damage done by this fellow occurs in the colder months. The reason is this: When warm weather approaches, most rats move from the farm or suburban town to make a residence in the fields bordering the village. Repeated complaints come to us on rat depredation at the onset of frosty weather in the early fall; many a rat have I seen squashed on the highway, and almost invariably the creature was observed in late September or early October. These parts are travelling from the cornfields and ditches to secure a shelter in some human household or barn—where evident damage occurs all through the cold months. This phenomenon is well known to pest control operators and dealers in traps. In some of the five-and-dime stores, a letter periodically reaches the manager in early September, asking if he has a sufficient supply of rat traps on hand, because trap purchases increase markedly in the fall.

THE porcupine is another migratory beast, however short his journeys may be. Secure in a rock ledge during the winter months, these amiable creatures may collect in some numbers, moving out to the feeding grounds as dusk approaches. Some prefer a solitary life, living well away from the winter den site, while the swelling buds of early April attract many from the communal home. In the leafless woods of early spring the mother gives birth to her single young. Another migrator.

The waters of the lower Hudson swarm with shad in late March or early April—shad intent on getting to their breeding grounds. A month later, this migratory run has reached the spawning grounds, reproduction occurs, and the adults return to the sea.

While ice still rims the pasture ponds, the spotted salamander journeys to the water to deposit the jelly-like egg clusters and then returns to the forest floor. At this season, too, we may hear the black-masked wood frogs clucking from the woodland pools, where the mating season draws them. After spawning, they too leave the water to take up residence often well removed from the breeding areas.

All about us animals are constantly moving, impelled by a number of causes. Much of this movement has a seasonal rhythm that recurs with marked regularity. The migratory movements are not too difficult of explanation; most are induced by climatic conditions, a lack of food, or the necessity of finding a suitable place to spawn.

Emigration among our wild animals are more difficult to fathom. How can we account for the mass movements of squirrels, often covering extensive areas? Why do muskrats forsake what appears to be a favorite marsh?

LET us consider the squirrel emigrations. Some hold to the theory that lack of food instigates these mass movements, and the proponents of this idea often quote a failure of the nut crop, on which the squirrels are dependent. Wishful thinking, to be sure, for both the gray and red squirrels are profligate feeders. Like the deer, they take a nip here, a bite there, and often drop to the ground below a large share of the fodder they are eating. Search for nuts may occupy their fall season, but surely the animals are adaptable, sampling a large share of the food on hand. And it appears hardly likely that the several suggested reasons for mass movement are occasioned by drought, flood, fire or other matters.

Following the 1933 mass movement of gray squirrels from western New England into New York, one writer postulated the theory that the red squirrels were responsible. This observer indicated that a large share of the grays were emasculated by their smaller cousin, the red squirrel. Oddly enough, many still hold to this belief, although there are no facts to substantiate the theory. On the Cornell campus, both grays and reds live amicably together, and there is no evidence that they are antagonistic to one another.

CROWDED conditions are not conducive to happy relations. We have found this commonly among our own tribe. Occasionally a population of a wild species builds up beyond measure. When such irruptions occur, some individuals must move into new quarters. The beaver, muskrat and squirrel (to cite a few) then leave their home site in order to establish a new one, often miles away.

Opinion

WHAT PRICE CAMPSITES?

GREAT concern has been expressed in recent years over this question: "How far should the State go in providing recreational facilities for its people and for its guests?" This concern has its roots in the rising cost of government at all levels; the same rising costs that affect you and your family also affect all units of government, since they also must purchase supplies and materials and employ people to carry out these and other services. In addition, there is the philosophical question: "Where should the line be drawn between government 'give-away' services and those operated on a 'pay-as-you-go' basis?"

Recreation means many different things to different people, and the State has a finger in many different kinds of recreation pie. The State Parks provide camping, picnicking, bathing and incidental facilities; the public campsites provide these same facilities on a somewhat less lavish scale. Both the parks and the Forest Preserve provide some skiing facilities. The State helps the hunter and fisherman by buying land so he will have more places on which to hunt and fish and by raising in its hatcheries and game farms fish and game species so there will be more of them for him. The State builds and landscapes scenic highways and parkways for citizens to enjoy on Sunday afternoon drives. And it even helps young folks to play more baseball through grants in aid to local organized recreation programs. All of these things are recreation to some segment of the people, all are services in which the State engages, and all cost money—in the aggregate, lots of money.

My own experience with the State's recreational services now extends over a period of twenty-six years. It has been limited to camping, picknicking, bathing, skiing, bodsledding, and facilities for wilderness travel and shelter. During all that period the pressure created by demand exceeding supply has been on camping facilities. On several occasions during that quarter century we thought we had caught up (or were about to catch up) with the demand. That never happened. For example, with the money made available to us through the Postwar Reconstruction Fund, we developed many new recreational facilities which we thought (or hoped) would satisfy the demand, but during the 1952 season at the public campsites 2,513 camping parties, comprising 9,955 persons, were actually turned away—in addition to those who saw the "No Vacancy" signs and did not apply. Another 3,275 parties, made up of 12,148 individuals, were temporarily taken care of on picnic grounds, undeveloped sites adjacent to the developed camping areas and like. Thus we have a total of 22,103 known persons who got substandard accommodations or no accommodations at all. Presumably they all got adequate accommodations eventually, but they did not get them where they wanted and when they wanted.

Personally, I feel that it is impossible to so guide a program that this will not happen in some degree. The popularity of resort areas will fluctuate over a period of years for reasons beyond anyone's control, and sometimes for no apparent reason at all. For example, the campsites in southern Hamilton County used to be filled to capacity and turning people away all season. Last year the only deficiency in that section occurred over the July 4th week-end, and that was only minor. I have yet to discover the reason for this.

It seems to me that the State has four choices as to the direction in which it can head in the provision of camping facilities. These are:

1. Have as an objective the provision of sufficient facilities to allow all people to camp as long as they like in the general area of their choice.

2. Have as an objective the provision of sufficient facilities to allow all people to camp for a *reasonable length of time* in the general area of their choice.

3. Have no definite objective, but simply add more facilities if, as, when and where it is possible, so long as the supply falls short of the demand.

4. Take the position that no further extension of this service is justified, that we will stand pat and distribute the existing facilities on as equitable a basis as possible, and let it go at that.

To take these possibilities in order, #1 seems to me to border on the unreasonable. One of my convictions is that the State is under no obligation to provide what might be termed "beneficial services" to the very ultimate degree. Unlike "necessary services" such as police protection, safe highways, and confinement of the dangerously insane, no great harm would come to the public by curtailment of the "beneficial services" short of the saturation point. The only way a policy such as this could be justified would be on the basis of its benefits and whether or not they were commensurate with the costs. That would be a difficult question to determine and undoubtedly subject to great differences of opinion. Unquestionably the benefits are substantial. They are principally of two kinds—better health for the users, and economic benefits for the immediate area and along the routes of travel leading to it.

Possibility #2 represents pretty closely the policy that (more or less by force of circumstances) we have been operating under for many years. Like all human endeavors, it has not been carried out with perfection 100 per cent of the time, but by and large I feel that a good job has been done in applying it over a long period of years. To me it is a reasonable policy, and one that can be justified on the basis of benefits and costs. The one question that arises in my mind is what now constitutes a *reasonable period*. Some years back, two weeks was the normal vacation period. But many people now have a four weeks' annual holiday. One could take the position that two weeks is a reasonable period and that people fortunate enough to have a longer holiday could spend the balance in other ways—perhaps catching up on the chores at home. Without doubt many such people do.

WHAT complicates the application of any policy of this kind is the potential all-summer camper, and we have quite a substantial number of these. This category is made up largely of teachers and persons in similar professions, and of families where the wage earner is within at least week-end commuting distance of one of our campsites. The subterfuges and schemes they invoke to stay on a public campsite throughout the vacation season are many and wondrous. New ones pop up every year. I have great sympathy for these people, because I know from personal experience how much long summers spent out of doors can mean to them.

To go back to our possibilities—almost anyone would rule out #3 on the basis of aimlessness. It is much too apt to result in a "squeaky wheel" policy, subject to (and governed by) pressures from many sources. We already have some developments on unsuitable sites and any future ones should be determined first on demonstrated need and second on suitability of site. And on no other considerations.

Possibility #4 is one that can only be determined in the light of the need for other State services and the relative importance of this one as compared to the others—definitely a question to be settled at the highest policy making level. The public campsites had their beginning in the early 1920's principally as a forest fire prevention measure. Unfortunately, the opinion of an Attorney-General which permitted the construction of these campsites remains to this day our only authorization to build them, and in view of the wording of Article I, Section 14 of our State Constitution, that opinion could be reversed at any time, or could be challenged in the courts. If that happens, I would not like to be counsel for the defense; in my opinion, our campsites are unconstitutional.

Since that time, the extension and increased efficiency of the Department's forest fire protection work and education of the public in forest fire prevention have made the importance of campsites from this standpoint relatively slight. On the other hand, their greatly increased use, especially by lower income groups, has lent them importance as a social service. I like to think, and I believe it is true, that many people who use them are having vacations in healthful surroundings who would have no real vacations at all if the campsites did not exist.

One way of making the existing facilities meet the demand might be to increase the camping service charge inaugurated in 1952. This charge produced revenue equal roughly to one-third of the cost of maintenance and operation. Disregarding capital investment, to put the campsites on a self-sustaining basis would mean tripling this fee—or increasing it from 50 cents per party per night and $3 per week, to $1.50 per night and $9 per week. This would unquestionably injure the people who need this service most, and could very well bring into play the law of diminishing returns.

MANY suggestions have been received by the Department over a long period of years looking toward a solution of our problem of short supply and long demand through a policy of discrimination against non-resident campers. I do not believe this would be a solution to anything; it could only result in New York gaining a reputation as a surly host among our friends in other states. Our records show that, with the exception of the war years, the percentage of out-of-State campers has increased steadily since 1939. In that year they made up 19.5 per cent of the campers and in 1951, 31.1 per cent.

I like to think this is due in large part to word of mouth advertising by people from other states who have enjoyed spending their vacations with us, but I realize that the extensive and excellent advertising campaign conducted by the State Department of Commerce in recent years has had much to do with it. It seems to me the State of New York would be in an embarrassingly inconsistent position if it were to urge non-residents to come and visit us—only to be discriminated against.

Apropos of this question of treatment of non-residents, I was interested recently to read in a publication of the Province of Ontario that non-residents are permitted to stay longer at their more popular campsites than residents are.

—WILLIAM MULHOLLAND,
Supt., Bureau of Camps and Trails

CONFERENCE ON GAME

ON May 8th and 9th, management, research and propogation personnel of the Conservation Department's Bureau of Game gathered at the Conservation Education camp at Raquette Lake for a "brass tacks" discussion on major phases of game management. Here, deep in the Adirondack Forest Preserve away from telephones and such distractions, two days and a good share of the nights were spent in shaping management objectives involving deer, pheasants and waterfowl.

In the case of deer, the game technicians had the advantage of up-to-date information resulting from surveys and observations during and after the 1952 season in all sections of the State. Basic factors, involving deer range problems, sex ratios, reproductive rates, ability of the range to support the herd, deer damage to agricultural interests and, perhaps most important, the role of the landowner (particularly in the intensively hunted Catskill, southern and western counties) were all evaluated to design a long-range deer management policy.

To achieve the maximum value from our deer resource, such a policy must establish safe and equitable provision for the maximum harvest and enjoyment of the deer crop in keeping with landowner rights, deer carrying capacity of the range and maintenance of optimum breeding stock level.

Considerable progress was made at the Raquette Lake conference in fitting these basic factors into the Bureau's recommendations for future deer seasons in New York.

Pheasant management was next on the agenda and, again, the opportunity was taken to review the comprehensive research work on this game bird in relation to its present distribution and population level throughout its range in the State. It was recognized that some changes had developed in pheasant range since the adoption back in 1949 of the present pheasant stocking policy based on first, second and third class range classifications. Even more important, the pheasant population has risen from its all-time low in New York in 1949, and now appears to be well along the road to recovery. These circumstances, the game men feel, necessitate a new hard look at the present day picture to determine: (1) What's the best type and length of season; (2) how should the season be adjusted to reflect the needs according to quality of pheasant range, hunting pressure, and section of the State; (3) what is the most productive use or distribution of game farm stock under present conditions; and (4) is there justification for the establishment of paid public shooting areas in certain intensively hunted sections of the State. In areas of the State where pheasant stocking can only be justified on a "put and take" basis or for the gun, considerable thought was given to the establishment of hen and cock seasons.

THESE and allied considerations will be used by the Bureau of Game in modernizing pheasant management policy in the near future.

Under the heading of waterfowl management, the emphasis was on ways and means of stepping up the creation of small marsh areas under the PR-48-D program. These small water areas, created on privately-owned lands through co-operative agreement between the landowners and the Conservation Department, have proved themselves to be a key management tool in increasing waterfowl nesting and brood production. Over 300 have been built to date, and now the streamlining of engineering requirements plus experience in construction gained during the past two years, promises even better progress in this field.

—A. W. BROMLEY

Forty-two bills involving changes in the Conservation Law in relation to Fish and Game were enacted at the 1953 session of the Legislature. Two other laws—amendments to the Penal and State Finance Laws—also affect conservation. The following is a summary of these changes:

FISH AND FISHING

Trout (Herkimer County)—The taking of all species of fish in waters inhabited by trout in Herkimer County is prohibited from March 1 until opening day of trout season. Effective July 1, 1953.

Trout—The taking of trout in all waters of Putnam County, except Gleneida Lake, is prohibited between midnight and 6 a.m. from opening of trout season through May 1. Effective January 1, 1954.

Trout Fishing—Fishing is prohibited between the hours of 7 p.m. and 7 a.m., E.S.T. from May 15 to end of trout season in Wiscoy Creek between bridge on Route 19 in Village of Pike, and dam located approximately 1,000 yards upstream in County of Wyoming. Effective immediately.

Lake Trout and Landlocked Salmon (Statewide and Lake George)—The minimum size limit for taking landlocked salmon anywhere in the State is reduced from 20" to 15". In Lake George a person may take in one day 3 lake trout and/or landlocked salmon in the aggregate, and whenever four or more persons are fishing from the same boat in such lake, they may take in one day not more than ten lake trout and/or salmon in the aggregate. Elsewhere a person may take not more than two landlocked salmon in one day. Lake trout season in Lake George is from April 1 to September 10. Effective immediately.

Trout (certain Adirondack counties)—The Department is empowered to fix, by order, minimum size limits for trout in waters in the Counties of Clinton, Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, Oneida, Saratoga, St. Lawrence, Warren and Washington. Effective July 1, 1953.

Black Bass (Schoharie River, Hudson River, Catskill Creek and Fall Creek)—The law which expires July 1, 1953, and which legalizes the taking of black bass of any size and in any number from the opening day of the trout season to November 30 in Schoharie River and tributaries above the barrier dam at Prattsville, Greene County; in the Hudson River upstream from the Thurman bridge in Warren County; in Catskill Creek and its tributaries upstream from the mill dam at Leeds, Greene County, and in Fall Creek from the crest of Ithaca Falls in Ithaca, including Beebe Lake, to the highway bridge at Croton City, Tompkins County, has been re-enacted for an indefinite period. Effective July 1, 1953.

Black Bass (special size limits)—The Department is empowered to fix, by order, corrective size limits for taking black bass wherever a growth rate study of any body of water reveals the growth rate of black bass is adversely affected by existing minimum size limits for such fish, thus resulting in improper annual harvests. Effective July 1, 1953.

Yellow Perch (netting)—Adds yellow perch to list of species of fish which the Department may permit to be netted during their respective open seasons. Effective July 1, 1953.

Bullheads—Legalizes the taking and possessing of bullheads in any number at any time except in Lake George and Loon Lake where the daily creel and possession limit is fixed at 35 per day. Effective July 1, 1953.

Great Northern Pike (Jefferson County)—Amends law to provide that in the inland lakes or waters of Jefferson County, pickerel not less than 12" in length and Great Northern Pike not less than 18" in length may be taken during the open season, and fixes a daily limit of 10 such pickerel or pike. Effective July 1, 1953.

Butterfish (Marine fisheries)—Provides that butterfish of any size may be taken and possessed, bought and sold at any time. Effective June 1, 1953.

Fluke or Summer Flounder (Marine fisheries)—Reduces minimum size limit from 15" to 14" for taking fluke or summer flounder by commercial fishing gear, and legalizes the sale of fluke or summer flounder measuring not less than 14". Effective immediately.

Menhaden, Shad and Herring (Richmond County)—Extends to July 1, 1955, power of Department to issue licenses to operate gill nets, pound nets and trap nets for taking menhaden, shad and herring from March 15 through June 15 in waters of the Marine District in Richmond County, fixes the terms of such licenses and make rules and regulations for the operation of nets used in taking such fish. Effective July 1, 1953.

Alewives—Amends law to add alewives to the list of fish which may be taken by use of scap or dip nets in waters of the State when permitted by the Department. Effective immediately and until January 1, 1955.

Closing Waters to Fishing—Extends to July 1, 1955 power of the Department to close, by order, any waters of the State to the taking of fish whenever an environmental investigation reveals that fish life therein is in danger of undue depletion because of low water levels brought on by drought. Effective July 1, 1953.

GAME BIRDS

Pheasants—Extends until January 1, 1956 Department authority to establish by order, open seasons and bag limits for taking pheasants, except on Long Island. Effective July 1, 1953.

SMALL GAME ANIMALS

Squirrels—Empowers the Department until January 1, 1955 to fix, by order, open seasons and bag limits for black, gray and fox squirrels. Effective July 1, 1953.

BIG GAME

Deer and Bear—Except in those parts of Broome and Chenango counties easterly of the Susquehanna River from its junction with the Unadilla River at the Chenango-Otsego county boundary line to a point where such river intersects the New York-Pennsylvania state line, where the open season will be from November 15 through November 30, the open seasons for deer and bear in 1953 will be as follows: Adirondacks, Oct. 25 through Nov. 30; Catskill, Nov. 15 through Nov. 30, except that the bear season in Delaware, Greene, Sullivan and Ulster continues to Dec. 15; the Putnam County deer season is from Nov. 15 through Nov. 22; Southern Tier, Central and Western counties, including Monroe and Erie, Nov. 24 through Nov. 30, except on the intervening Sunday.

Deer Season (Westchester County)—Open season in 1953 for taking deer of either sex in Westchester County *with long bow only* will be from Nov. 15 through Dec. 15.

Deer Season Opening (six-day counties)—In those counties of the State having an open season for deer and bear from Nov. 24 through Nov. 30, except the intervening Sunday, deer and bear shall not be taken prior to 9 a.m. on the opening day. On the remaining days of the season, the legal shooting hours are from 7 a.m. to 5 p.m. Effective July 1, 1953.

Antlerless Deer (filing)—When the Depart-

ment establishes an open season for antlerless deer, the order establishing it shall be filed in the office of each County Clerk of the counties affected, prior to September 1st. Effective July 1, 1953.

Bow and Arrow for Deer—No person shall use an arrow with an explosive head, or shaft with an arrowhead that measures less than seven-eighths of an inch at its widest point, or has fewer than two sharp cutting edges. Effective July 1, 1953.

Mailing Deer Tag—No longer necessary to report to the Department by registered mail the taking of a deer. Reports may now be made by ordinary mail, but must be sent to the Department within five days after the close of the open season in the county where the deer was taken. Effective July 1, 1953.

FUR BEARERS

Beaver and Otter (traps)—Legalizes the use of a leg-gripping trap having a spread of jaws not exceeding 7½", measured at a right angle to the axis upon which the jaws operate, and including the gripping surface of each jaw, for the taking of beaver or otter in open seasons in the *spring* of the year. During otter and beaver seasons established in *other* seasons of the year, traps having a spread of jaws in excess of 6 inches may not be used. Effective immediately.

Muskrats—Authority of Department to regulate, by order, open seasons for muskrats in the Northern and Southern zones extended to July 1, 1954.

FIREARMS SAFETY LAWS

Hunting Accident Penalties—Penal Law amended to recognize two acts formerly classed as manslaughter or assault in second degree as new crimes—(1) criminal negligence while engaged in hunting which results in the death of another, and (a) criminal negligence while engaged in hunting which results in injury to another not amounting to the crime described in (1). In the case of (1) the punishment upon conviction may be a term not exceeding five years imprisonment, or a fine of not more than $1,000, or both. In the case of (2), the punishment may be imprisonment for not to exceed one year, or a fine of $500, or both. Effective July 1, 1953.

Discharge of Firearms—It is illegal to discharge firearms in such a way as to result in the load passing across a public highway. Not applicable in Forest Preserve counties to public highways other than State or county highways. Effective July 1, 1953.

Big Game Hunters Under 18—A person under 18 years of age who previously has not held a big game license and engaged in hunting thereunder must not engage in hunting deer or bear unless accompanied by his parent or legal guardian or by a person over 21 years of age who has had at least one year's experience in such hunting. Person hunting deer or bear or assisting or accompanying another in such hunting must at such time have on his person a big game license. Effective July 1, 1953.

MISCELLANEOUS

Pike and Muskrat Shooting—Provisions permitting the taking of muskrats by firearms not larger than 22 calibre in Lake Champlain, and pickerel and pike by shooting and spearing in Lake Champlain, are repealed as of March 1, 1954.

Dog Training Season—Legalizes the training of dogs from August 1 through April 1. Effective July 1, 1953.

Nuisance Raccoons—Permits owners of property, or lessees and members of their families at any time and in any manner to take raccoons injuring private property in the Southern Zone. Raccoons taken under this provision must be immediately buried or cremated. Effective July 1, 1953.

Bobcats, Coyotes and Foxes—Legalizes during 1953 and 1954 (a) the taking of bobcats and coyotes at any time in the Counties of Clinton, Franklin, St. Lawrence, Jefferson, Lewis, Herkimer, Hamilton, Essex, Warren, Oswego, Oneida, Fulton, Saratoga and Washington, and (b) the taking of foxes in any county of the State at any time. All provisions of the law with respect to licenses and types of trap must be complied with. Effective July 1, 1953.

Importation of Domestic Game—Repeals provision requiring a license from the Department to import domestic game for breeding or stocking purposes; continues license and tagging requirements to import carcasses of domestic game for food. Effective July 1, 1953.

Nutria—Prohibits releasing, importing for release or causing to be imported for release, nutria. Effective July 1, 1953.

Aid in Rabies Control—Extends until March 31, 1954, provisions of the Conservation Law providing State aid to counties participating in rabies control measures. Effective April 1, 1953.

Posting of State Lands—Empowers the Department to issue blanket rather than individual permits to hunt on game management areas. Effective July 1, 1953.

Veterans' Licenses—Permits until July 1, 1954 members of the United States armed forces in active service to take, without license, fish, birds and quadrupeds, *except deer and bear*, in accordance with the provisions of the Conservation Law when in the uniform of such armed forces or have on their persons their furloughs or copies of orders granting leaves of absence, and service identification tags. Such persons are also entitled to purchase citizen-resident big game licenses upon payment of the regular fee. Effective immediately.

Lobsters—Legalizes the taking, possessing, buying, selling, importing and exporting of lobsters measuring not less than three and three sixteenths inches measured along the carapace. Effective immediately.

Plumage—Conservation Law provisions in relation to plumage have been brought into conformity with the United States Tariff Act in relation to these items. Effective immediately.

Rights of Landowner—It is unlawful for a person hunting, trapping or fishing without permission on posted or unposted lands not to leave immediately when requested to do so by the owner, lessee or lawful occupant. In addition to fines and penalties that may have been incurred for violation of the trespass law, a person convicted suffers the loss of his current hunting, trapping and fishing licenses and the loss of the privilege to purchase any such license in the ensuing year; and, in the discretion of the Court, a further loss of the privilege to purchase any such licenses for a period not exceeding one year. Effective July 1, 1953.

Firearms, Coyote or Wolf Hunting—Authorizes local Game Protectors during the closed season for deer in the Adirondack Park to issue to a person hunting wolves and coyotes with the aid of a dog, a permit to use in such hunting a rifle of any calibre and a shotgun loaded with a slug, ball or buckshot. Effective immediately.

County Bounties—Boards of supervisors of any county may appropriate moneys for the payment of bounties for the taking of foxes. Effective July 1, 1953.

Appropriation of Land—The Conservation Department empowered to invoke §676-a of Conservation Law to acquire lands and property rights for the care, management, protection and enlargement of the fish and game resources of the State. Effective immediately.

—JUSTIN T. MAHONEY

DEER SURVIVAL

WE had another "open" winter, a very early spring, and the wettest spring ever recorded in the State of New York. By that, we mean that the rainfall for March, April and the first half of May set records for all three months.

The effects of the early and wet spring have yet to be determined as far as wildlife is concerned, but the effect of the mild winter (the fifth in succession) on one of our major game species, the whitetailed deer, has now been pretty well determined as a result of investigations made in the field. In a normal or average winter, we expect and get a considerable winter kill in our Adirondack deer populations; this past winter, there was virtually none.

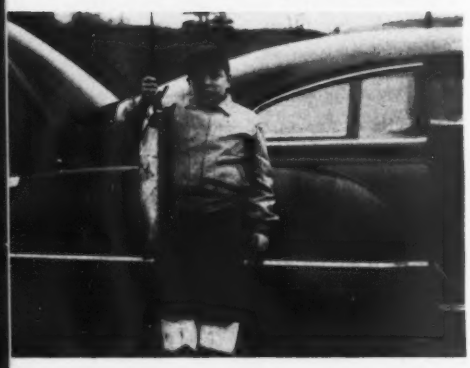
Jack Tanck, Game Research Investigator for the Department, as of this writing has cruised all of the major known deer yards in the Adirondacks except those along the Moose River; he's cruising those now. He estimates that he has covered 4,862 acres of Adirondack deer yards. And he has found only *one* deer whose death could be surely attributed to severe winter conditions. This was in the Michigan Mills area of Lewis County, where snow was 54 inches deep as of March 4th.

Although there were deep snows in other sections, he reports that over the Adirondacks in general there was a heavy crust formed early in the winter at the 18 to 20-inch level—a crust hard enough to support the deer, and high enough to permit them to reach browse that wouldn't ordinarily be available. Tanck concludes his report by observing that there was less winter kill this year than any since the winter of 1949-50. The last winter when there was a substantial mortality was that of 1947-48.

To many sportsmen and others interested in deer, all this may seem like good news; at any rate, it undoubtedly means that this fall there will be a great many deer in the Adirondacks—possibly more than ever before.

To Game Managers and other professional conservationists, and to many educated sportsmen, it means something else. According to the best of our knowledge, it means that there are now a great many more deer in the Adirondacks than the range can support in even an average winter. It means that even with a continuation of mild winters, unless this growing herd is harvested more adequately than the present law allows, we will lose deer from malnutrition. And it means that we will see an extension of a trend already apparent: the physical degeneration of a very fine and much respected animal.

Report on Catharine Creek



THE trout run on Catharine Creek this year was a little larger than during 1952. The flood control construction on the stream which was completed in 1951 in my opinion cut down the trout run last year, but it had no effect this spring as the trout seemed to be using the new channel which was made to by-pass Montour Falls proper.

On March 11th and 12th, the Fisheries Biologists of our Western Fisheries District, in co-operation with biologists from the Department of Conservation at Cornell, shocked and tagged 281 fish, the largest weighing 14.8 lbs. Males averaged 2.3 lbs., females 6.1 lbs. There were several other fish better than 10 lbs. and a number of fish just about 10 lbs. On Opening Day a catch of eight tagged fish was reported to us; total to date (4/21/53) 15 fish. Of course, more may have been taken and not reported. This suggests that the fish taken on Opening Day were possibly, but not necessarily, a new run of trout after the others had been tagged.

About a week before the season opened, we had a heavy rain and it put the creeks to flood stage for several days. However, on Opening Day, the stream was in excellent condition, but there were only about 2,500 to 3,000 people on the creek—the smallest turnout we have had in several years.

We started a full patrol of 15 men working three 8-hour shifts on March 19th. Up to that time, we had very few complaints of violations, and the complaints we received after we arrived in force on the creek were mostly to the effect that persons were disturbing the trout on their beds by poking sticks at them and driving them out of the pools in this manner, also stoning them from the bank. Until this year we have never done anything but warn people about such actions; but this year it was necessary to arrest several persons for such offenses. After several arrests were made, this type of violation ended.

We believe that more people are now giving us co-operation which we never had before on protecting these rainbows. I think the work we have done on public relations in years before is now paying off in the assistance we are receiving from the general public.

On March 30th, the motorcycle detail arrived and on the 31st went to work patrolling the stream in the day time. This gave the men who had worked during the daytime up to then a chance to do more night patrol work. The motorcycle detail worked hard and co-operated in every way possible with the other Protectors who had been on the stream. I would like to say something about these five men who came to help, it can be said in a few words: If they ever want to come to the Binghamton Division they are welcome either on detail or transfer. And from what I've heard, the people in Schuyler and Chemung counties—and all real Catharine Creek sportsmen—feel the same as I do.

Violations: There were 23 cases during this detail; 20 cases have been settled to date with a recovery of $542.50, and three are still pending. Five persons were apprehended possessing 11 rainbows which we believe were taken with explosives, but we were able to prove only illegal possession. Two of these defendents were old violators and were fined $100 each in criminal action; three were under 20 years of age and their cases were settled for $27.50 each. Three men from out-of-State were apprehended on April 4th for spearing in the creek and were fined in criminal action for $35 each. The other cases were for snatching and dip netting.

Many of the complaints that resulted in these arrests were given to us by sportsmen who had taken license numbers and driven the violators out of the stream, and then held them until a Protector arrived. We have never had this type of co-operation before.

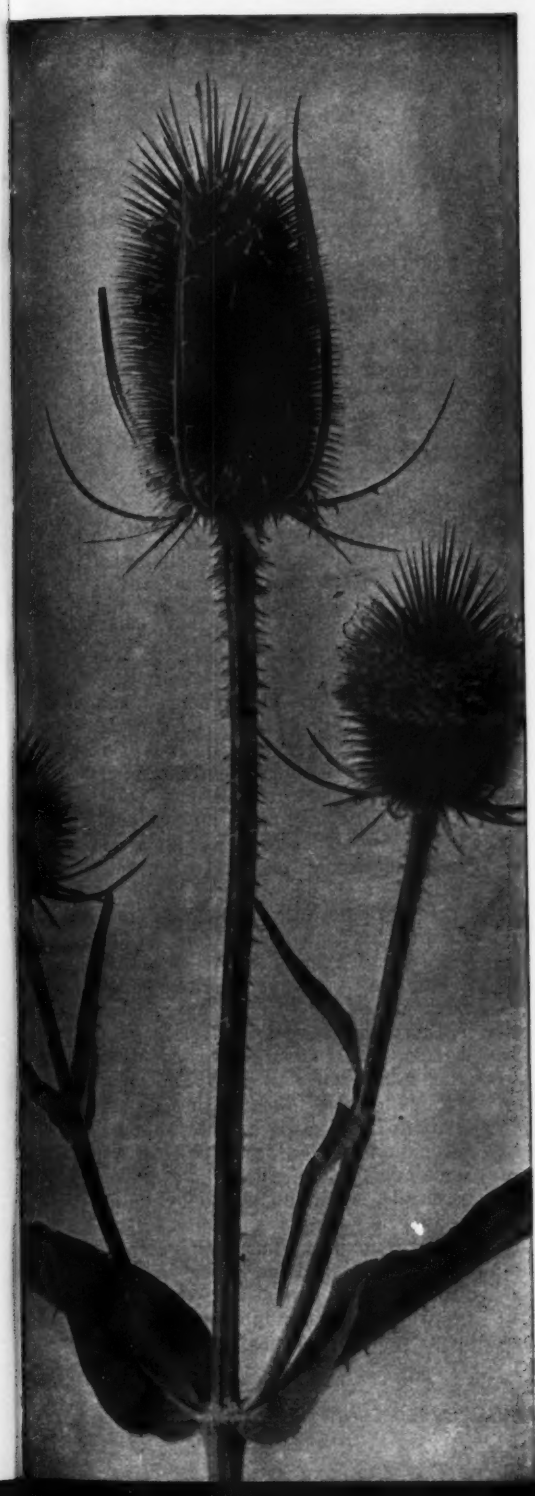
OUR radios were used many nights on the feeder streams where a large number of the spawning trout could easily be removed from the stream with hands, or by kicking them out. These radios saved a lot of fish from being taken before the season opened by letting the Protectors know when people were going up these feeder streams. The effect of having the radios on location—and of publicizing this information—prevented many violations.

And that is what we were trying to do: Not make any record of arrests, because all the Protectors believe that the best enforcement is stopping a violation before it starts.

—C. D. FREER, *Dist. Game Protector*

about WEEDS

Wild Teasel—*Dipsacus sylvestris*, naturalized from Europe; used with its cousin (Fuller's Teasel) in wool mills; Man hasn't found a substitute.



THE pictures on these pages show some of the common weeds that grow on our abandoned fields, in our gardens and woods. Most people think these weeds (and thousands of others like them) are merely what they seem—nothing but "weeds." But in the biological world and the conservationist's book, every plant has its place and its purpose. Every plant is important in Nature's seemingly haphazard scheme of things that grow on the land. Weeds aren't exceptions; they have a purpose too.

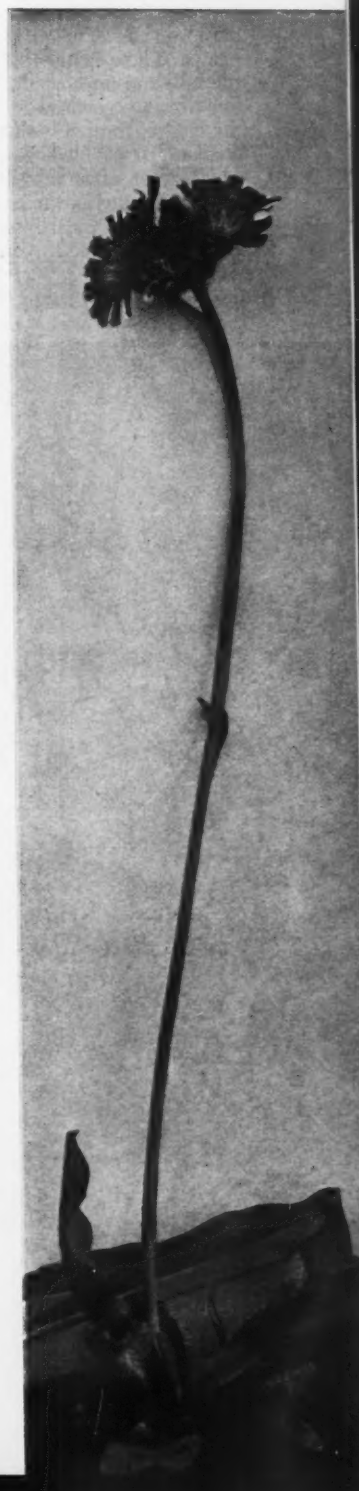
All plants are weeds until Man finds a use for them. All of our cultivated plants were considered to be weeds at one time or another, but as soon as Man learned how to put them to use and derived some value from them, they ceased to be weeds. Today, they are cultivated for many different purposes—food, shelter, medicine, clothing. Tomorrow, some scientist will find a new use for a plant that is considered a weed today. When that happens, the weed will cease to be a weed; it will graduate to the status of a cultivated, useful plant.

There is another way of looking at weeds. Some of our valuable cultivated plants may be considered weeds at different times and places. In Man's way of thinking, any plant that interferes with his basic crop automatically becomes a weed because, at that moment, he is not interested in it and has no immediate use for it. It becomes a plant out of place—a weed. For instance, valuable timber trees (maple, oak, hickory, ash) are considered to be weeds in a pine plantation. So is a tomato plant if it grows in a corn field.

Nature's purpose in growing plants is to cover the earth with a final crop. In our section of the country, this crop, if allowed to develop, would be composed mostly of beech and maple trees. Since these trees are a final or end crop, we call it a *climax vegetation*. And theoretically, when Nature produces this crop, she is supposed to have arrived at a state of balance with her environment (the climate and soil) which maybe took thousands of years to make.

In the beginning, it doesn't matter whether Nature starts with a lake (to be *filled in* with soil) or with a mountain of rock (to be *converted* to soil). Plants are the stepping stones or the

Devil's Paint Brush—*Hieracium aurantiacum*; abundant on fertilizer-deficient pastures and waste lands.



tools to do this job. They are the soil builders. (Animals play an important part also, but for the purposes of this article, we won't mention them further.) During the centuries it takes Nature to reach a climax, millions of plants grow and die and disintegrate, each in some way altering the original piece of ground on which it grew, making the soil more ideal for new plants. In time, simple plants are replaced with more aggressive, adaptable and tolerant plants. These in turn add their bodies to make and improve the soil. Finally, the climax vegetation is reached where the land is covered with a combination of plants (trees) which are stable and which, year after year, replace themselves with their own kind. This condition remains until something drastic happens to change the environment, or until some outside factor comes into the picture. Something like *Man*.

Swamp Smartweed—*Polygonum Muhlenbergii;* perennial in muddy or dry places; seeds eaten by wildlife.

Red Baneberry—*Actaea rubra;* found in rich woods; berries poisonous to eat, not to touch.

Man did step into the picture at a time when Nature was well on her way to achieving this climax crop of trees in New York and the Northeast. In fact, Nature had already reached this climax in many parts of the State when Man picked up his axe and cut what took thousands of years to produce.

Man cut down the forests to make room for his agriculture, industries and homes. In his cutting, he overestimated the ability of the land to yield him an economic return, and he also overestimated his ability to manage this land properly. Today, as a result, New York has some 5 million acres of abandoned lands. These are all idle, growing nothing except a blanket of weeds. But the weeds on our abandoned lands are slowly growing and dying and adding their bodies to rebuild the soil so that once again, some day perhaps, the climax forest will come back into being on those lands.

So you see, weeds are important to our way of life. Small plants must grow and die to build soil for larger plants. But, in the case of abandoned lands, where the soil is capable of producing trees, Man can step into the picture again, not to destroy, but to help Nature. He can give Nature a big boost in her time schedule by reforesting these abandoned lands with evergreen seedlings of many different species.

The soil erosion problem in this State would be far greater if it were not for the lowly weeds (those plants we haven't found useful as yet). Weeds play a mighty role in soil stabilization, in preventing floods, in keeping silt and mud out of our reservoirs and streams. They provide food for fish and wildlife and for our valuable insects. They serve as miniature wind and snow fences. They hold down shifting sand dunes. And potentially, weeds are an untapped resource for new useful products.

On the other hand, there are lots of things we don't like about weeds. They decrease the quality of crops and reduce crop yields by crowding cultivated plants and by using up valuable moisture; they increase the cost of raising crops; they reduce land values as much as one-half; they serve as breeding grounds for plant diseases; they harbor injurious insects and they poison some 15 million head of cattle each year. Some humans, too. Have you ever had poison ivy or eaten a poisonous mushroom?

Weeds are like so many other things; they are both good and bad, depending on your frame of mind and your interests when you come into contact with them. And some of them are beautiful.

—NICK DRAHOS

B E A C H C O M B I N G S

THRUSTING eastward one hundred and twenty miles into the blue waters of the Atlantic, Long Island is famous for many things; for commuters and cauliflower, for fishing and frolic, for people by the millions and potatoes by the billions! Encircling this fabulous stretch of New York real estate are the cradling waters of the sea and in between, the Island's greatest resource: Its beaches. Along these sandy shores and in the shallows of the sounds, the bays and the sea itself, life teems in myriad forms, the molluscs leading the parade.

Situated in temperate seas and swept by the fringes of the Gulf Stream, Long Island is home to many of these "house-on-their-back" molluscan invertebrates which, as a group, is exceeded in number only by the insects and their joint-footed allies. More than 100,000 species of molluscs have been identified and named, and many can trace their ancentry by fossil records back through 300 million years to the Paleozoic Era. Even then they appeared in highly specialized form, so it's probable they got their start at a much earlier time.

Not only are these backboneless animals of ancient vintage—they're versatile too. Ranging in size from the microscopic to the "king-size" giant clam measuring up to four feet across and weighing some 500 pounds, they are of two main categories: the univalves and the bivalves. You will recognize the difference immediately when you compare some of the univalves like the snails, the conches or the periwinkles, to bivalves like the clams, the oysters or the scallops. But whether they have one or two valves or shells they have this in common: The shell

(Continued on page 22)

The cover and center-spread pictures of shells are from *Natural History of New York, Part 1, Mollusca, Crustacea.* Even though subsequent studies have wrought many changes in nomenclature, this work, authored by James E. De Kay in 1843, is still recognized as a classic in the field. For bridging the 110-year gap and bringing us up to date on the scientific names of species shown here, we are greatly indebted to Dr. William J. Clench, Curator of Molluscs, Museum of Comparative Zoology at Harvard College. For the original paintings, credit goes to J. D. Hill.

LEGEND FOR NEXT PAGE AND COVER

1. *GONIOBASIS VIRGINICA:* A fresh water mollusc.
2. *PHYSA HETEROSTROPHA,* (a tadpole snail): Shell smooth, thin and fragile. Common in ponds and streams.
3. *LOLIGO PEALEII:* The common squid of Long Island waters. A specialized mollusc having an internal cartilagenous support. Constantly in the process of changing color from red to blue to violet to brown or orange. Devours great numbers of small fish and crabs, and in turn, furnishes food for larger fish. Extensively used by fishermen for bait. Extremely swift in the water, operating by jet propulsion.
4. *EPITONIUM MOVANGLIAE* (a staircase shell): The specimen pictured was taken from the stomach of a fish.
5. *OSTREA VIRGINICA,* (oyster): The picture is of a young one. Oyster culture in Long Island waters nets the producers about $7 million annually.
6. *THAIS FLORIDANA,* (the Florida dye shell): Members of the genus found in Long Island waters. This particular specimen was found on the bottom of a ship in New York harbor—stowaway from southern waters.
7. *LITTORINA SAXITILIS,* (the rough periwinkle): A very common small shell on the shores of Long Island.
8. *SILIQUA COSTATA,* (two views of the ribbed pod shell): A thin shelled clam, fairly common in Long Island waters.
9. *GONIOBASIS VIRGINICA:* A fresh water species.
10. *ALASMIDONTA UNDULATA:* A fresh water clam.
11. *BUSYCON PYRUM,* (the pear conch): Found along the coast, particularly southward.
12. *NEPTUNEA DECEMCOSTATUS,* (the ten-ridged neptune): May be found on the beach after heavy storms.
13. *VENUS MERCENARIA:* The common round clam or quahog famous for its use in clam chowder. Smaller sizes called cherrystones. Highly valued as food. Indians on Long Island processed these shells into wampum or seawan giving rise to the Island's early name "Seawan hackee" or the Isle of Shells.
14. *LIGUUS SOLIDA:* Found on southern beaches.
15. *SILIQUA COSTATA,* (same as #8): The ribbed pod shell.
16. *DENDRONOTUS FRONDOSUS,* (a bushy-backed slug): Found about docks and timbers. Derives name from the shrub-like projections from back.
17. *OLIVA SAYANA,* (the lettered olive): A southern species found mostly on Florida beaches.
18. *VALVATA TRICARINATA:* A small fresh-water mollusc.
19. *HELISOMA CORPULENTUM:* A fresh water species.
20. *POLINICES HEROS,* (the moon shell): A large common shell on our beaches.
21. *EPITONIUM RUPICOLA,* (the ladder shell): A small mollusc of our beaches.
22. *MARGARITES GROELANDICA,* (the wavy topshell): May be found along our beaches.
23. *TROPHON CLATHRATUS,* (one of the rock shells): Present on Long Island shores.
24. *MARGARITANA, MARGARITIFERA:* A large fresh water clam.
25. *LAMPSILIS ROSACEUS:* A fresh water clam.
26. (Same as #25).
27. *BUSYCON CARICA,* (the giant whelk): Common, and the largest, of the convoluted shells. Some market value for food. That pictured is a young one; the adult shell is not so varied in color.
28. *BUCCINUM UNDATUM,* (the waved whelk): Occasionally found along our beaches.
29. *LYMNAEA STAGNALIS,* (the great pond snail): A fresh water species.
30. *MARGINELLA CARNEA,* (a marginella): A southern species often found on Florida beaches.
31. *BUSYCON PYRUM,* (the pear conch): May be found along our shores, but more common to the south.
32. *SPISULA SOLIDISSIMA,* (the surf or hen clam): The largest of the bivalves on our shores.
33. *ARCA TRANSVERSA,* (the transverse arkshell): Commonly found along our shores.
34. *LOLIGO PEALEII:* The common squid of Long Island waters. A specialized mollusc having an internal cartilagenous support. Constantly in the process of changing color from red to blue to violet to brown or orange. Devours great numbers of small fish and crabs and, in turn, furnishes food for larger fish. Extensively used by fishermen for bait. Extremely swift in the water, operating by jet propulsion.
35. *AGRIOLIMAX AGRESTRIS:* A slug or slug-worm of terrestrial habit. Found under decayed leaves.
36. *LIMAX FLAVUS:* Another slug.
37. *VENERICARDIA BOREALIS:* Occurs along all the shores of Long Island.
38. *ANODONTA CATARACTA:* A fresh water species.
39. *MODIOLUS MODIOLUS,* (the horse mussel): Burrows in gravel or sand from shallow water to 80 fathoms or more.
40. *MYTILUS EDULIS:* The common edible mussel of our bay shores.
41. *UROSALPINX CINEREUS,* (the oyster drill): A common shell of our coasts. Known as the Drill by the oystermen because of its habit of piercing or drilling the shells of oysters and destroying the animals by sucking out the juices.
42. *ENSIS DIRECTUS:* The common razor-shell clam of our marine shores. Good eating.
43. *PECTEN GIBBUS BOREALIS,* (a scallop): One of the most common shells on the coast of New York, known by popular name of scallop. Highly prized as food.
44. *EUPLEURA CORDATA,* (the borer): A common shell on our shores.
45. *CAMPELOMA DECISA:* Common fresh water species.
46. *VENUS MERCENARIA NOTATA:* A variant of the common round or hard clam. More abundant to the south.

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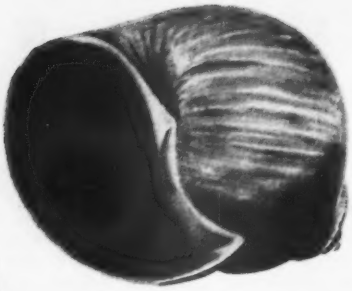
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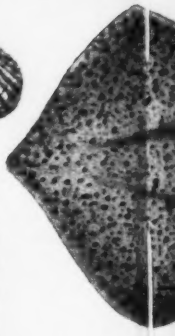

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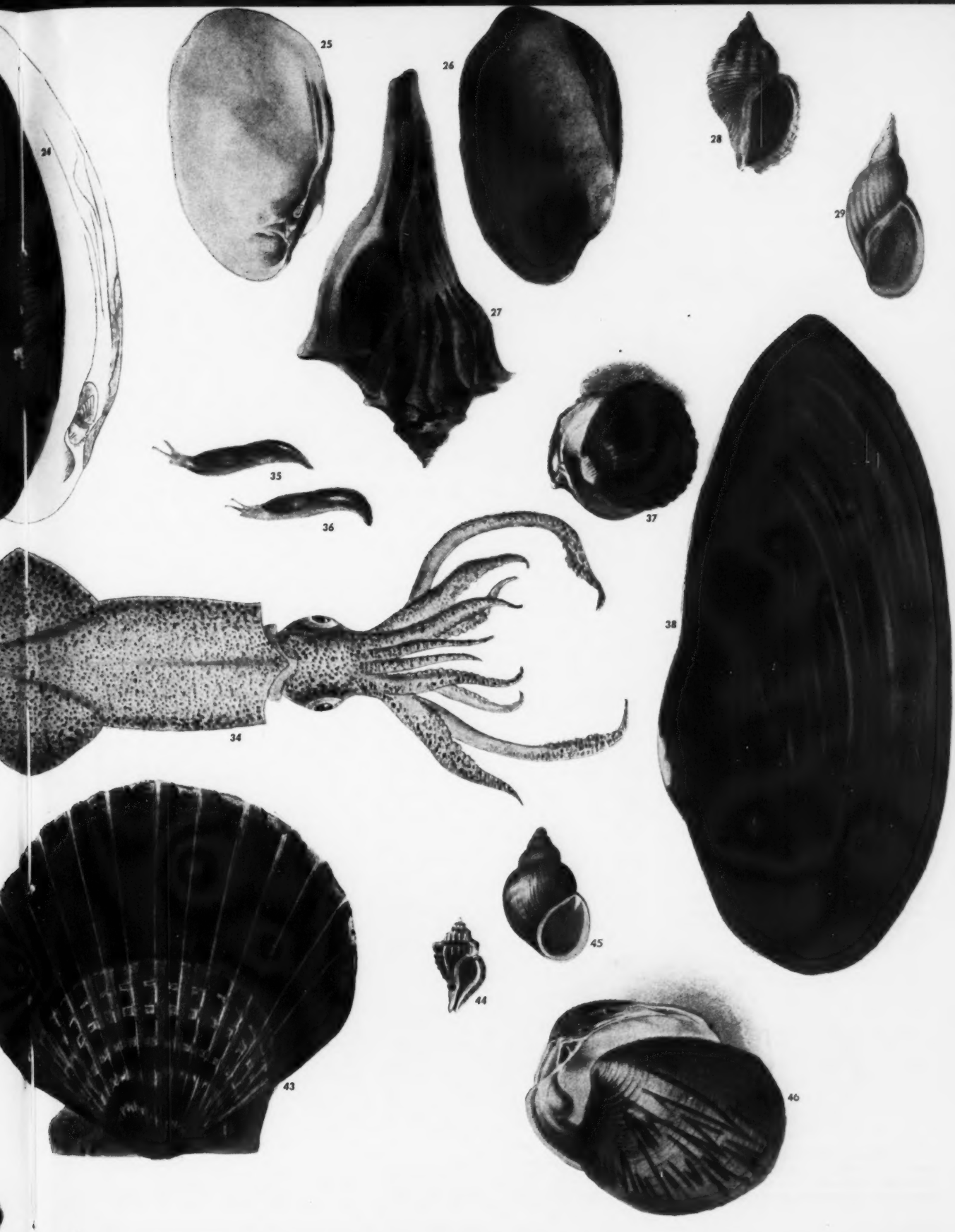
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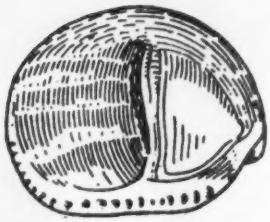


Crepidula Fornicata, **(The Boat Shell or Quarter Deck): Half of the concave interior of this common small shell is bridged over with a diaphram, giving it the appearance of the quarter deck of a vessel. Extensively used by oystermen to spread over the sea bottom as a clutch on which to plant seed oysters.**

Donax Fossor, **(The Digger Wedge Shell): A small olive colored shell with blue rays. One of the most common shells along the South Shore of Long Island.**

surrounds the body, a skeleton worn on the outside as armor. And real armor it is. Developed according to the size and design of its owner and inhabitant, the shell is extruded as a malleable limestone substance. Predominantly carbonate of lime, the shell quickly "sets" to a greater hardness than glass. So it's little wonder that these creatures have been able to leave such fine records of their ancestry in the fossil-bearing rocks of bygone ages, or that they are still with us in such numbers; it's hard to find a better mechanism for self preservation against one's enemies or the adverse elements of one's world than that developed by the molluscs.

To reverse an axiom, however, there is no gain without some loss, and the molluscs are no exception. In building their skeletons on their backs, a nearly impregnable fortress home, they have forfeited the freedom of movement enjoyed by other creatures which wear their bones inside. But if you think this discourages the molluscs—and that they all give up and just "lie there"—you're in for a surprise. The scallop, for instance, is really a swimming clam. By manipulating its valves in various combinations it sucks in and expels water, lifting itself from the bottom, zigging to the right, zagging to the left or taking off, usually in a group of its fellows, on an extended cruise or mass migration. Clams (you will discover this upon digging for them) are agile burrowers, and most everyone has seen a snail "walking." The octupus and the cuttlefish, both specialized molluscs, are pretty good swimmers and the squid, another molluscan specialty, is a marine "jet," rated (for short distances) as one of the speediest animals of the sea. And even oysters which spend their old age (if they're lucky enough to escape the horse-radish sauce) cemented to the bottom, have their fling as baby oysters swimming about looking for good home grounds upon which to settle. But most of the molluscs, it's true, lead a pretty sedentary life clinging to aquatic leaves and stems, fixed to submerged timbers and spiles, inching along wave-washed cliffs or buried in the sand.

Cardium Pinnatulum, **(A Cockle Shell): A small, fragile shelled cockle of our beaches. An abundant and important food for marine fish of our waters.**

The general stay-put habit of shellfish, together with their abundance, their value as food, and their worldwide distribution has been and still is of great value to humans. Archeologists recognize shell mounds or middens as positive evidence of earlier civilizations, for men, then as now, looked for the easy way and settled along the shores of ancient seas where shellfish were easy to capture and good to eat. Nor have the mollluscs lost any of their appeal to the palate over the ages. Last year, on Long Island alone, commercial fishermen harvested 132,560,852 pounds of shellfish of all kinds having a market value of $11,270,905.

Anomia Simplex, **(The Smooth or Plain Jingle Shell): A small, fragile bivalve, common along our shores. Shell is pale golden-yellow, often with a greenish pearly irridescence.**

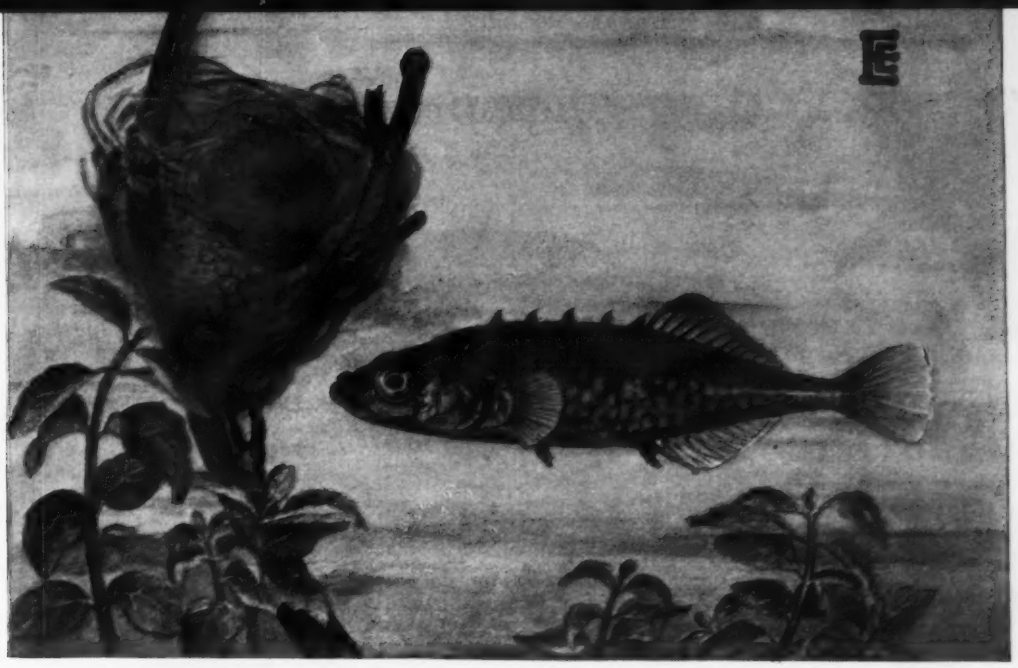
Nor does the value of molluscs end with food. Their shells have been prized through the ages as ornaments. Native tribesmen in many parts of the world depend upon shell necklaces, wristlets, anklets and similar ornamental arrangements to establish their proper social rank, and the shell of one of the more beautiful molluscs, the golden cowrie, is reserved as a symbol of royalty. Among many peoples of the world shells have religious significance, and also monetary; everyone is familiar with wampum, the money of our Indian predecessors.

While you can't get far today in the local A. & P. with a pocketful of wampum (or money either, for that matter) shellfish have other values for us in ways less direct. They are a dietary staple of many of our food and game fishes, and wild ducks, particularly the divers, depend on them as a regular food. Nor would we be concerned today about whether the states or the Federal government owned the off-shore oil deposits, for these—as *all* our oil fields—were developed over eons of time through the deposition of marine life on the floors of ancient seas. It may seem incredible that shellfish could have contributed so heavily to such a resource, but you must bear in mind the astronomical numbers of these creatures in our seas of yesterday and today. Fortunately, Rachel Carson in her great book and best seller, *The Sea Around Us*, has set us straight on some of the relevant facts. She points out that there is little similarity between the chemical composition of the waters of our rivers which feed the sea and that of sea water itself. The elements are present in entirely different proportions. Rivers bring into the sea four times as much calcium as chloride, yet in ocean water there is 46 times as much chloride as calcium. What brings about this startling reversal? One big reason for the difference is the immense amount of calcium withdrawn from the sea water by the molluscs for shell building.

If you began life inland (and most of us did) it's likely your first introduction to the molluscs was through the glass doors of Aunt Susie's china closet. There, in neat and polished array, were the conches, whelks, scallops, periwinkles, limpets and all the other pretty shells collected along the beach the time she and Uncle Harry spent a week at the shore. And if you were on your good behavior you might even be allowed to hold the big conch shell to your ear. Sure enough, you could still hear the rumble of the sea.

A SHELL like that is a handy possession. In its singing depth, like the roll of the surf, lie memories of the parade of life through the ages—and also an invitation to walk today beside the sea, maybe just to breathe the good salt air, maybe to feel the sand between your toes. Or maybe, if our story and pictures have excited your interest, to begin your own collection of shells.

—AL. BROMLEY



THE BROOK STICKLEBACK

Once upon a time there was a sturdy, pioneering stickleback by the name (as you might know) of Stinky. Now when he was very young, Stinky Stickleback often became extremely depressed because the only places for him to swim were upstream or downstream and from side to side of the very small brook where he was born. He wanted to go much farther. So Stinky consoled himself somewhat at such times watching a pair of redstarts who happened to be building a nest right near the stream. He admired the way they flew hither and yon and their beautiful color no end. Their construction of a nest fascinated him.

Naturally he soliloquized about the matter, somewhat wistfully, saying, "I certainly can't fly like that and I guess they'll always have it over me some on color, but just could be I could build a nest quite as good as that one. A nest like theirs maybe would help me pretend I'm like them in other ways."

So he tried and he could and he did. Consequently the sticklebacks adapted nest building as a family habit and have become familiarly known among their Indian friends as "Fish-Who-Make-Nest-Like-A-Bird."

MODELS for the stickleback and nest above were taken from a small quarry pond between Potsdam and Norwood, St. Lawrence County. Several nests were found there, all constructed principally of green algae and suspended on sticks or stiff stems of non-woody vegetation. Building nests of the bird-like type is a characteristic of most sticklebacks, including all four species found in New York.

The male brook stickleback seems an exemplary member of his sex; he does everything around the house except lay the eggs. He builds the nest, often using fibrous material other than algae, cementing it into place with a special secretion for the purpose. He guards the eggs and young zealously, driving away (or at least attempting to drive away) anything that moves in the vicinity. He often carries this to the extreme of killing the female if she attempts to approach while the eggs are incubating. (Perhaps "exemplary member" was not quite the correct description.) It is even said that the male will pick up in his mouth newly-hatched fry which attempt to stray from the nest too soon, returning them to the nest. Just a little later (his predatory instinct apparently submerging his parental solicitude) he may take them into his mouth and forget to let them go again.

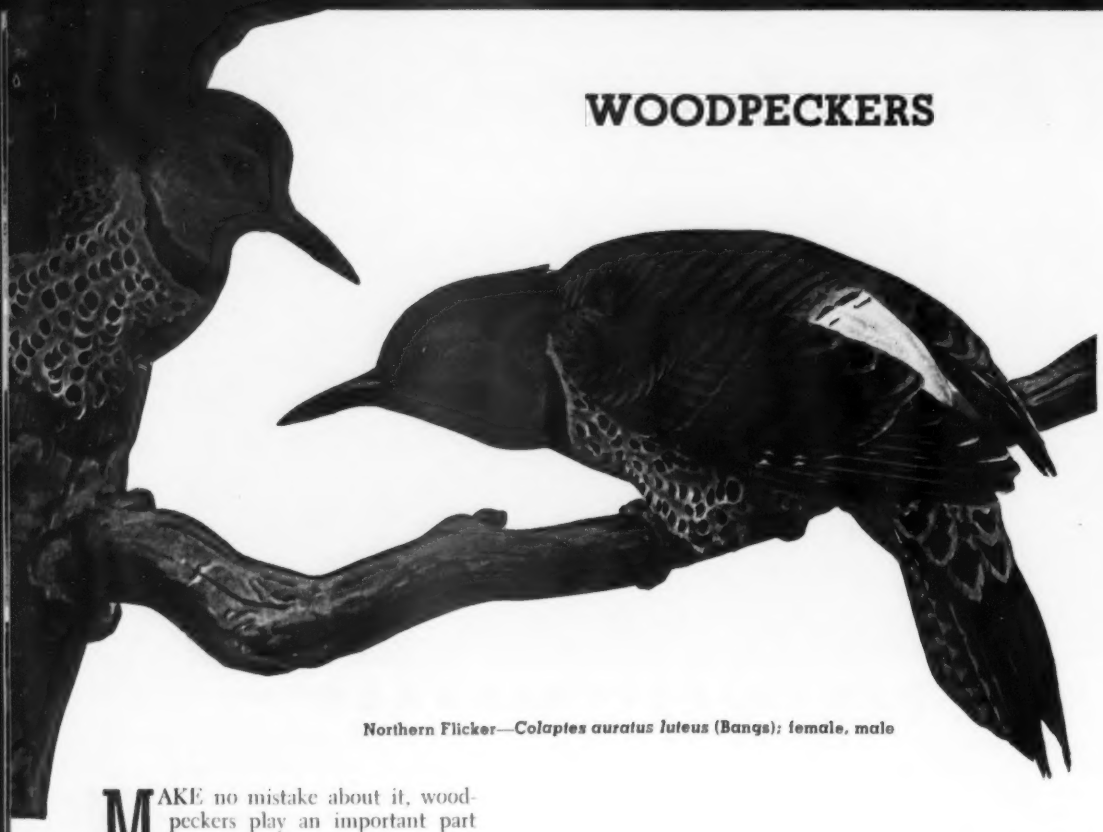
In addition to pugnacity and nesting habits operating to protect the eggs and young, sticklebacks appear to be rather intolerant of competition from other fish. They are usually found in headwater streams or small ponds or swampy situations where few other fish occur. The abundant vegetation in which they normally occur is undoubtedly necessary protection for them in most situations favorable to them.

Usually brook sticklebacks prefer more stagnant situations than do trout, but since they frequent headwaters they are sometimes naturally available to trout as forage. In fact their small size, favorable food habits and relative defenselessness has led to trial stocking of them in ponds as trout forage. This has been quite successful in some instances, although most biologists agree that trout feed quite efficiently upon the primary food organisms and produce best under single species management. In other words, as far as trout rearing is concerned, forget about stocking sticklebacks.

ASIDE from uses as a forage fish, sticklebacks provide interesting and relatively hardy aquarium fishes. If provided with the necessary materials, they will construct nests and breed normally in aquaria. But in order to insure survival of some of the young, it is necessary to remove the adults at about the time the fry are ready to leave the nest. If you have a stickleback-stocked aquarium, stickleback watching and exercise of some biological philosophy in the attempt to explain why and how sticklebacks have developed their specialized spawning habits make an excellent way to occupy time between TV shows. Verily if the truth about Stinky Stickleback were fully known, it would be stranger than fiction.

—C. W. GREENE,
Senior Aquatic Biologist

WOODPECKERS



Northern Flicker—*Colaptes auratus luteus* (Bangs): female, male

MAKE no mistake about it, woodpeckers play an important part in conservation. From the point of view of the conservationist we have the *good* woodpeckers—which destroy the insects which in turn destroy many of our forest trees; and we have the *bad* woodpeckers which go to work on the trees themselves. And then you can add fuel to the controversy by pointing out that there are a great many people who think that all woodpeckers—all birds, in fact—are good. We will stay out of that argument.

There are 22 species of woodpeckers in the United States, and our State records nine. These are the northern flicker, pileated woodpecker, red-bellied woodpecker, red-headed woodpecker, yellow-bellied sapsucker, hairy woodpecker, downy woodpecker, American three-toed woodpecker and Arctic three-toed woodpecker.

Conservation-wise, the best job that woodpeckers can do for us is to destroy the insects that destroy our forest species. We have many birds that work for us in this respect: The warblers will be working in the tree tops; the cuckoos in the underbrush; the thrushes nearer the forest floor—while the woodpeckers will be climbing and digging all the way from the forest floor to the tree top level. But unfortunately there is no one species of bird that can find and dispose of the many different insects that threaten our forests. On the contrary, most birds have a varied diet, and each has different habits and different ways of securing its food. The fact remains, however, that the woodpeckers are probably the most conspicuous with regard to their effect on conservation, and also with regard to public appreciation and misconception of their activities.

As to misconceptions, probably the most popular is that the pileated woodpecker destroys trees by drilling into them. The truth of the matter is that he only drills to capture the carpenter ants which are really responsible for the destruction of the trees. Equally misunderstood is the role of the red-headed woodpecker, which may offer a positive contribution toward conservation by reforesting the ground below—as do many other seed-storing birds.

Sapsucker

As we said, nine species of woodpeckers have been recorded in New York State. One of these, because of its principal food and method of obtaining it, is known as the sapsucker. It is not only widely distributed, but is highly migratory and the most destructive of all woodpeckers. The *yellow-bellied* sapsucker pierces the outer and inner bark of trees with feeding holes, and through these openings the bird feeds on exuding sap and an occasionally attracted insect. The feeding holes are most frequently observed in horizontal rows of ¼ inch round oval holes extending around the trunk of the tree. Occasionally, however, the drilling may be stacked vertically.

Damage involving mechanical injury resulting from search for food is not devastating to growth, but it does reduce the vitality of the tree and its rate of growth. And it renders the tree more susceptible to fungus attack and produces defects in the wood.

The yellow-bellied sapsucker is a migratory visitor to New York, most frequent in the Adirondacks and Catskills. Although it is known to attack more than 275 kinds of trees and brush in quest of food, the most popular are the cone bearing members of the pine family. Because so many of these pines are planted for ornamental purposes in parks and around homes, depredations of the yellow-bellied sapsucker may be particularly objectionable.

Red-Headed Woodpecker

The red-headed woodpecker is generally thought of as a summer resident in New York, but it has been known to stay over winter—especially when there are large quantities of beech mast, dried fruits and nuts. It is estimated that its diet is one-third animal matter (bugs, beetles, etc.) the rest being a varied assortment of such things as cherries, grapes, pears, corn, beechnuts and acorns. To complete the picture,

there are records of this beautiful bird robbing the nests of other birds—although this is an unusual occurrence.

It has been noted that this bird is becoming a rarity in many parts of the country — including New York State — though there are still many localities where it seems to return year after year. One explanation for this is the scarcity of dead trees and limbs where the red-head makes its home after arriving around the end of April or the first of May. However, another point to consider is the large numbers killed by automobiles; this woodpecker (unlike most others) can often be seen perched on telegraph poles or fence posts, from which they fly down to catch the grasshoppers that are moved by passing cars.

Though sometimes a nuisance to fruit growers (as are the starling and robin) I think his significantly small numbers in most areas—plus his appetite for insects—warrants his protected status in New York. And not to be forgotten should be his esthetic value to nature lovers and anyone who walks in the open fields and groves where he is most commonly found.

Flicker

State bird of Alabama, the flicker or "high hole" is found throughout most of the United States. As a resident species in New York State, he is generally found in the open woodlands, but is a common sight along the roadside or golf course. And he may often be flushed from anthills in the open fields, where he is in search of his favorite food.

The food of the flicker consists largely of ants, although there are many other insects which he may feed upon. These include click beetles, leaf chafers, pine-weevils, cicadas, peach borers, tent caterpillars and codling moths. At times we have had complaints from home owners that woodpeckers were digging holes in their shingles (probably in search of the elm leaf beetles that have wintered there). But as often as not the complaint is unfounded, for what the home owner thinks is digging may actually be a flicker drumming on the tin gable—telling all flickers in his vicinity to stay out, "*this is my territory.*"

His nesting site is usually a dead stub in a clearing or often a telephone pole. However, it is not uncommon for the flicker to use a nesting box erected for that purpose.

In early days the flicker was a game bird, but it is now protected—and for good reason.

—David G. Allen,
Kinne F. Williams

GREENWOOD LAKE

PHYSICAL FEATURES:

Area: 1,920 acres.
Elevation: 621 feet.
Maximum Depth: 57 feet.
Length: Approx. 6 miles.
Maximum Width: Approx. ¾ mile.

CHEMICAL CHARACTERISTICS:

Water: Color, clear.
pH: Slightly acid.
Oxygen: Insufficient for normal development of fish life below 30–34 feet.
Plant Life: Extensive beds in the narrow bay at the north of the lake and very common throughout the southern end of the lake. The predominant plants are Robin's pondweed and water weed.

FISH PRESENT:

Largemouth bass: Found principally in the New Jersey end of the lake and in the extreme northern end. Growth is good.
Smallmouth bass: Found principally along the rocky ledge on the east side of the lake. Not as abundant as the largemouth bass. Growth is good.
Chain pickerel: Common in shallow weedy areas. Growth is satisfactory.
Yellow perch: Abundant. Growth is good.
Calico bass: Uncommon, restricted to small areas. Growth is good.
Sunfishes: Generally abundant with bluegill being most numerous. Growth is good.
Rock bass: Uncommon, found mostly in smallmouth bass water. Growth is good.
Northern brown bullhead: Abundant. Growth is good.
White catfish: Common. Growth is good.
Forage fish: Minnows and other species of forage fishes range from abundant to rare.

SPECIAL NOTE:

As a result of a joint fisheries survey conducted by aquatic biologists of New York and New Jersey, a set of uniform regulations was adopted. New legislation recently enacted by the New York Legislature enabled the New York State Conservation Department to co-operate with the New Jersey Division of Fish and Game to regulate the fishery of Greenwood Lake. Either New York or New Jersey licenses will be honored on all of Greenwood Lake. The new unified regulations are as follows:

SEASONS:

Largemouth and smallmouth bass—15 June-30 November.
Chain pickerel—20 May–1 March.
Bullhead, yellow perch, calico bass, pan fish—No closed season.

SIZE LIMITS:

Largemouth and smallmouth bass—12".
Chain pickerel—12".
Bullhead, yellow perch, calico bass, pan fish—None.

DAILY LIMITS:

Largemouth and smallmouth bass—5 (5 largemouth and/or smallmouth, all of one species or partly of each, per person).
Chain pickerel—10.
Bullhead, yellow perch, calico bass, pan fish—None.

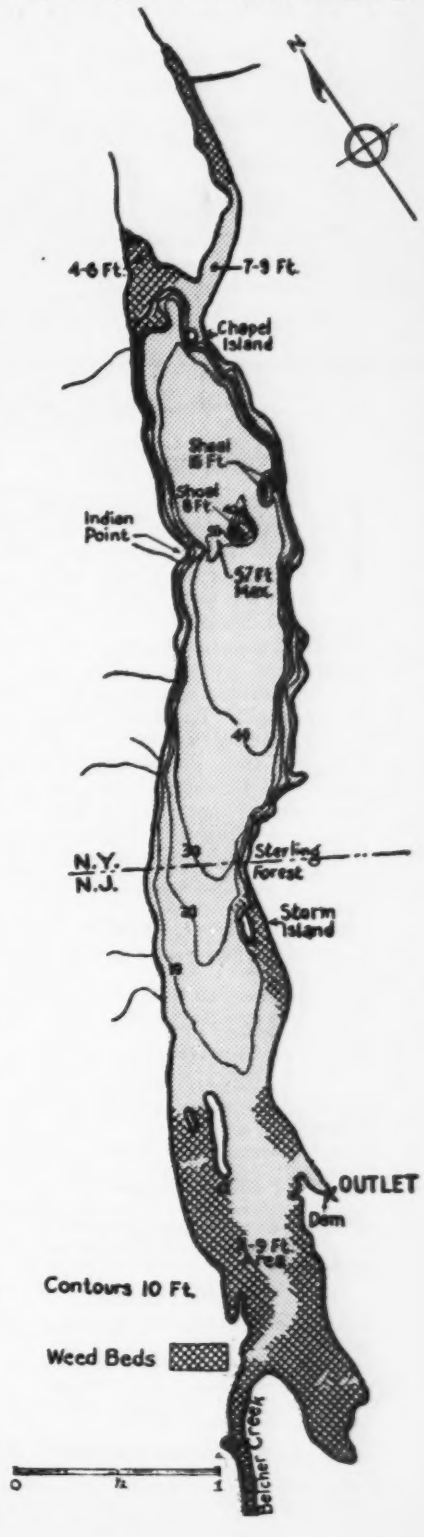
OTHER REGULATIONS:

Five (5) tip-ups are allowed per angler. The angler's name and address are required on each tip-up. Fishing is permitted twenty-four hours a day.

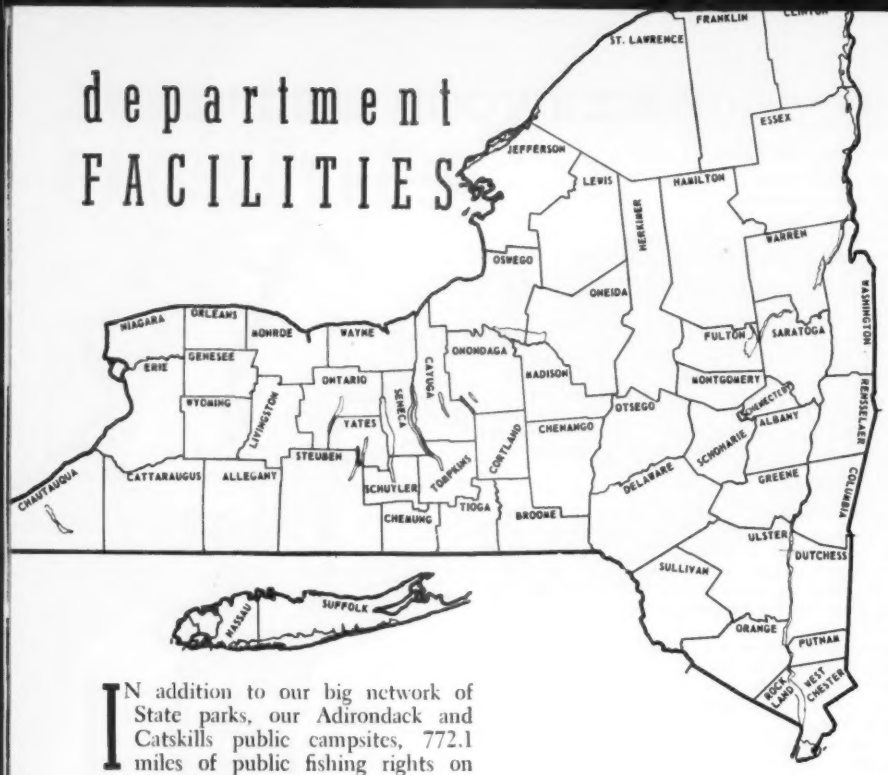
—John D. Gould, Aquatic Biologist

LOCATION:

Orange County, N. Y., and Passaic County, N. J.



department FACILITIES



IN addition to our big network of State parks, our Adirondack and Catskills public campsites, 772.1 miles of public fishing rights on the State's top trout streams, two large forest tree nurseries at Lowville and Saratoga, and the Saratoga Spa, the Department operates a large number of other facilities which may be visited by the public. THE CONSERVATIONIST herewith presents a directory of these—including State Forests (reforestation areas), Fish Hatcheries, Game Management Areas, Game Farms and Fire Towers—all open to public inspection.

Personnel in charge of these facilities will be happy to explain their purposes and the part they play in the conservation of our natural resources—soil, water, forests and wildlife.

NOTE: State Forests and a large portion of the Game Management Areas are open to public hunting and fishing, and are plainly marked by Department signs. Fish Hatcheries usually are open 8 a. m. to 4:30 p. m. Some Fire Towers are manned only during a hazardous period.

—ROLAND B. MILLER

ALBANY COUNTY

State Forest—3,240 acres in west and central parts.
Game Management Area—Partridge Run Game Management Area, 4,016 acres, 3 miles north of Rensselaerville.
Game Farm—Delmar Game Farm, Delmar.

ALLEGANY COUNTY

State Forest—41,962 acres in northwest, west, north central, east.
Game Management Areas—Hanging Bog Game Management Area, 3,647 acres, 1 mile north of Black Creek village; Rattlesnake Hill Game Management Area, 5,148 acres, 5 miles southeast of Nunda (partly in Livingston Co.)
Fire Tower—Jersey Hill, 8½ miles west of Almond.

BROOME COUNTY

State Forest—7,247 acres in east central and south.
Fish Hatchery—Lily Lake at Chenango Forks.
Fire Towers—Ingraham Hill, 5 miles south of Binghamton; Page Pond, 7 miles northwest of Deposit.

CATTARAUGUS COUNTY

State Forest—26,727 acres in southwest, north, central, east central.
Fish Hatchery—Randolph at Randolph.
Fire Towers—Hartzfeet Hill, 4½ miles south of Olean; McCarty Hill, 5 miles east of Little Valley (not manned June 1-Oct. 1); Summit Hill, 4 miles east of administrative building in Allegany State Park.

CAYUGA COUNTY

State Forest—7,942 acres in southeast.

CHAUTAUQUA COUNTY

State Forest—15,019 acres in southwest, west central and east.
Fish Hatchery—Chautauqua at Bemus Point.
Game Management Area—Canadaway Creek Game Management Area, 2,015 acres, 5 miles northeast of Cassadaga.

CHEMUNG COUNTY

State Forest—502 acres in northwest.

CHENANGO COUNTY

State Forest—64,854 acres in northwest, northeast, south central, southeast.
Fish Hatchery—South Otselic at South Otselic.
Game Management Area—Pharsalia Game Management Area, 4,498 acres, 1 mile north of North Pharsalia.
Game Farm—Rogers Game Farm, Sherburne.
Fire Tower—Berry Hill, 9 miles west of Norwich.

CLINTON COUNTY

State Forest—6,520 acres in northwest and southwest.
Game Management Area—Au Sable Game Management Area, 571 acres, at mouth of Au Sable River on Lake Champlain.
Fire Towers—Lyon Mountain, 2½ miles southwest of Chazy Lake; Palmer Hill, 1½ miles north of Au Sable Forks off Silver Lake road.

COLUMBIA COUNTY

Game Management Area—Rogers Island Game Management Area, 270 acres beneath east end of Rip Van Winkle Bridge across Hudson River.
Fire Tower—Washburn Mt., 1.8 miles east of Copake.

CORTLAND COUNTY

State Forest—24,775 acres in north, northeast, southwest.
Fire Tower—Morgan Hill, 4 miles northeast of Truxton.

DELAWARE COUNTY

State Forest—13,344 acres in west, southeast.
Game Management Area—Bear Spring Mountain Game Management Area, 7,114 acres, adjoins Rt. 206 three miles southeast of Walton.
Fire Towers—Rock Rift, 6 miles northeast of Rock Rift; Twaddell Point, 4 miles north of East Branch; Mt. Utsayantha, 2½ miles northeast of Stamford.

DUTCHESS COUNTY

Fire Towers—Beacon Mt., 3 miles southeast of Beacon; Clove Mt., 3.8 miles northeast of Billings; Stissing Mt., 2.5 miles southwest of Pine Plains.

ESSEX COUNTY

Fish Hatchery—Crown Point at Crown Point.
Fire Towers—Adams Mt., 4 miles north of Tahawus off the road from Tahawus to the Upper Works; Belfry Mt., 1 mile northwest of Witherbee on Lincoln Pond road; Boreas Mt., 3 miles west of Clear Pond on road from Blue Ridge to Elk Lake; Goodenow Mt., 2 miles west of Newcomb on Newcomb-Long Lake highway Rt. 28N; Hurricane Mt., 5 miles west of Elizabethtown off Rt. 9; Makomis Mt., 1 mile east of Underwood off Rt. 9; Pharaoh Mt., 5 miles east of Schroon Lake off Crane Pond road; Pok-O-Moonshine Mt., 1½ miles west of Pok-O-Moonshine campsite on Rt. 9 between Keeseville and Elizabethtown; Vanderwhacker Mt., 5 miles west of Aiden Lair off Moose Pond road; Whiteface Mt., 8 miles west of Wilmington on Whiteface Mountain highway.

FRANKLIN COUNTY

State Forest—18,001 acres in central, south.
Fish Hatcheries—Adirondack at Saranac Inn; Chateaugay at Chateaugay.
Game Management Area—DeBar Mountain Game Management Area, 8,390 acres, 3 miles east of Meacham Lake.
Fire Towers—Ampersand Mt., 7 miles southwest of Saranac Lake off Rt. 3; Azure Mt., 8 miles south of St. Regis Falls; DeBar Mt., 3 miles north of Meacham Lake campsite on Rt. 10; Loon Lake Mt., 5 miles west of Loon Lake; Mt. Morris, 5 miles south of Tupper Lake off Rt. 10; St. Regis Mt., 4 miles west of Paul Smith's off Bay Pond road.

FULTON COUNTY

State Forest—1,264 acres in north.
Fish Hatchery—Johnstown, R. D. 2, Gloversville.
Fire Tower—Kane Mt., 4 miles northwest of Caroga Lake.

GENESEE COUNTY

Game Management Area—Oak Orchard Swamp Game Management Area, 2,259 acres, 4 miles north of Oakfield.
Game Farm—White Game Farm, Bascom.

GREENE COUNTY

State Forest—2,217 acres in north central, south.
Fire Tower—Hunter Mt., 2.5 miles south of Hunter.

HAMILTON COUNTY

Fire Towers—Blue Mt., 1 mile north of Blue Mt. Lake; Cathead Mt., 6 miles west of Northville; Hamilton Mt., 4 miles south of Lake Pleasant; Kempshall Mt., 5 miles east of Long Lake; Owl's Head Mt., 4 miles southwest of Long Lake village; Pillsbury Mt., 7 miles north of Speculator; Snowy Mt., 8 miles southwest of Indian Lake village; T-Lake Mt., 3 miles west of Pisco; Tomany Mt., 12 miles north of Caroga Lake; Wakeley Mt., 15 miles west of Indian Lake; West Mt., 4 miles northwest of Raquette Lake.

HERKIMER COUNTY

State Forest—2,918 acres in north, south.
Fire Towers—Dairy Hill, 6 miles east of Newport; Fort Noble Mt., 20 miles northeast of Poland; Moose River Mt., 3 miles northwest of Thendara; Rondaxe Mt., 4 miles northeast of Old Forge; Stillwater Mt., 24 miles east of Lowville; Woodhull Mt., 8 miles north of Old Forge.

JEFFERSON COUNTY

State Forest—17,274 acres in northeast, southeast, south.
Game Management Areas—Perch River Game Management Area, 3,591 acres, 10 miles north of Watertown; Littlejohn Game Management Area, 7,889 acres, 10 miles north of Redfield (partly in Oswego Co.)
Game Farm—Brownville Game Farm, Brownville.

LEWIS COUNTY

State Forest—73,356 acres in north, west, southeast.
Fire Towers—Bald Mt., 13 miles northeast of Croghan; Gomer Hill, 4 miles west of Turin; New Boston, 3 miles north of New Boston; Number Four, ½ mile south of Number Four.

LIVINGSTON COUNTY

State Forest—2,590 acres in south central.
Fish Hatchery—Caledonia at Mumford.
Game Management Area—Rattlesnake Hill Game Management Area, 5,148 acres, 5 miles southeast of Nunda (partly in Allegany County).

MADISON COUNTY

State Forest—19,734 acres in central, southwest, east, southeast.
Game Management Area—Tioughnioga Game Management Area, 3,980 acres, 1 mile west of Erieville.
Fire Towers—Brookfield Tower, 8 miles northeast of Sherburne; Georgetown Tower, 3 miles northwest of Georgetown.

MONTGOMERY COUNTY

State Forest—6,420 acres in central, south.

NASSAU COUNTY

Fish Hatchery—Cold Spring Harbor at Cold Spring Harbor.

ONEIDA COUNTY

State Forest—32,211 acres in northwest, northeast.
Fish Hatchery—Rome, R. D. 3, Rome.
Fire Tower—Penn Mt., 6 miles northwest of Remsen.

ONONDAGA COUNTY

State Forest—2,146 acres in south, southeast.
Game Management Areas—Cicero Swamp Game Management Area, 3,624 acres, 3 miles southeast of Cicero; Three Rivers Game Management Area, 2,513 acres, 2 miles north of Baldwinsville.

ONTARIO COUNTY

Game Management Area—High Tor Game Management Area, 2,853 acres, 1 mile east of Naples (partly in Yates Co.).

ORANGE COUNTY

Fire Tower—Graham Mt., 5 miles southwest of Otisville.

OSWEGO COUNTY

State Forest—19,526 acres in north, east, southeast.
Fish Hatchery—Oneida at Constantia.
Game Management Areas—Happy Valley Game Management Area, 8,421 acres, 5 miles northwest of Parish; Littlejohn Game Management Area, 7,889 acres, 10 miles north of Redfield (partly in Jefferson Co.).

OTSEGO COUNTY

State Forest—16,085 acres in northwest, central, northeast.
Fish Hatchery—Van Hornesville at Van Hornesville.
Fire Tower—Hooker Hill, 1 mile east of Maryland.

PUTNAM COUNTY

Fire Tower—Nimham Mt., 2.9 miles south of Farmers Mills.

RENSSELAER COUNTY

State Forest—1,957 acres in north central.
Game Management Area—Capital District Game Management Area, 3,908 acres, 3 miles north of Stephentown Center.
Fire Towers—Dickinson Hill, 4.8 miles west of North Petersburg; No. 7 Hill, 5.2 miles southeast of Sand Lake.

ROCKLAND COUNTY

Fire Tower—Jackie Jones Tower, 3.5 miles west of Stony Point.

ST. LAWRENCE COUNTY

State Forest—45,686 acres in north, east, south.
Fish Hatchery—St. Lawrence, R. D. 4, Ogdensburg.
Fire Towers—Cat Mt., 6 miles southeast of Wanakena; Arab Mt., 3 miles southwest of Piercefield; Moosehead Mt., 2 miles northwest of Childwold; Tooley Pond Mt., 6 miles northwest of Cranberry Lake; Catamount Mt., 8 miles southeast of South Colton; Whites Hill, 4 miles south of Parishville; Sand Hill, 4 miles southeast of Massena.

SARATOGA COUNTY

State Forest—574 acres in northwest and central.
Fish Hatchery—Lake George, R. D. 2, Gansevoort.
Game Management Area—Vischer's Ferry Game Management Area, 810 acres, 1 mile southeast of Vischer's Ferry.
Fire Towers—Cornell Hill, 1½ miles south of Saratoga Lake; Hadley Mt., 8 miles northwest of Hadley; Spruce Mt., 2½ miles northwest of South Corinth.

SCHOHARIE COUNTY

State Forest—30,312 acres in west, northeast, east, south.
Fire Tower—Petersburg Mt., 3½ miles north of Cobleskill.

SCHUYLER COUNTY

State Forest—15,913 acres in southwest, east.
Game Management Area—Connecticut Hill Game Management Area, 11,020 acres, 1 mile northeast of Alpine (partly in Tompkins Co.).
Fire Tower—Sugar Hill, 6 miles west of Watkins Glen.

STEUBEN COUNTY

State Forest—18,668 acres in west central, northeast, east.
Fish Hatchery—Bath, R. D. 2, Bath.
Game Management Area—Erwins Game Management Area, 2,504 acres, 3 miles west of Painted Post.
Shrub Nursery—Painted Post at Painted Post.
Fire Towers—Erwin Tower, 3 miles west of Painted Post; Prattsburg Tower, 2½ miles west of Prattsburg.

SUFFOLK COUNTY

Game Farm—Middle Island Game Farm, Ridge, L. I.
Fire Towers—Bayshore Tower, near Islip; Flanders, 3 miles east of Riverhead; Kings Park, at Kings Park; Stony Hill, 1 mile north of Amagansett; Telescope Hill, 1 mile south of Selden.

SULLIVAN COUNTY

Fish Hatcheries—Catskill at Livingston Manor; Summitville at Summitville.
Fire Tower—Roosa Gap, 1.5 mile east of Summitville.

TIOGA COUNTY

State Forest—7,571 acres in north, east.

TOMPKINS COUNTY

State Forest—4,174 acres in east, southeast.
Game Management Area—Connecticut Hill Game Management Area, 11,020 acres, 3 miles west of Newfield (partly in Schuyler Co.).
Game Farm—Ithaca Game Farm, Ithaca.
Fire Tower—Padlock Hill, 2½ miles northeast of Caroline Center.

ULSTER COUNTY

Fire Towers—Balsam Lake Mt., 8.8 miles north of Claryville; Belleavre Mt., 1.6 miles southwest of Pine Hill; High Point Mt., 2.6 miles east of Ellenville; Mohonk Mt., 7.2 miles east of Kerhonkson; Mt. Tremper, 2.4 miles east of Phoenicia; Overlook Mt., 3.6 miles northeast of Woodstock; Red Hill Mt., 2.4 miles east of Claryville.

WARREN COUNTY

Fish Hatchery—Warrensburg at Warrensburg.
Fire Towers—Crane Mt., 3 miles northwest of Thurman; Gore Mt., 4½ miles southwest of North Creek; Prospect Mt., 1½ miles west of Lake George; Swede Mt., 5½ miles west of Hague.

WASHINGTON COUNTY

State Forest—1,259 acres in northwest.
Fish Hatchery—Washington Co. at Cambridge.
Fire Towers—Black Mt., 5½ miles southwest of Clemons; Colfax Mt., 4 miles north of Cambridge.

WESTCHESTER COUNTY

Fire Towers—Cross River Mt., 2.6 miles west of Lewisboro; Nelson Mt., 3 miles north of Croton-on-the-Hudson.

YATES COUNTY

State Forest—1,900 acres in south.
Game Management Area—High Tor Game Management Area, 2,853 acres, 2 miles east of Naples (partly in Ontario Co.).

THE BACK OF THE BOOK

SCATTERSHOTS AND DEPARTMENT ACTIVITIES

RATTLESNAKE CORRECTION

In writing the article for THE CONSERVATIONIST (Feb.-March issue), "Yes, We Have Rattlesnakes," we expected repercussions and were keenly conscious of the possibility of error creeping in. It did:

Split Rock Mountain south of Whallonsburg Bay on Lake Champlain has long been considered as the northern limit of the Timber Rattlesnake in this State, and apparently that is still the case. Our error (which we much regret) was in locating Sully Mitchell's farm near Rattlesnake Mt. west of Willsboro Bay. The Mitchell farm was 15 miles south of Willsboro Bay, and west of the south end of Split Rock Mt. We confused the names Willsboro and Whallonsburg by some mental lapse, induced probably by the name Rattlesnake Mt. near Willsboro. The road from Whallonsburg easterly to Whallonsburg Bay is apparently the northern limit for rattlers as of 1953. As no normal rattlesnake would travel 15 miles in any direction, especially north, from his haunts on Split Rock Mt., it is safe to assume that the Town of Willsboro is free from rattlesnakes.

We took some liberties with the name Grog Harbor which lies under the north ridge of Split Rock Mt.—good strong grog being the old time remedy for snake bite. Too late we learned an interesting bit of Colonial lore about the strange name of this little bay on Lake Champlain. Tradition has it that a French-Irishman named DeGrogan captured a British bateaux loaded with rum. It well may be that DeGrogan and his crew landed under Split Rock Mt. to sample their prize, saw a few rattlers and went berserk. Anyhow, the association of rattlesnakes and grog makes a good story.

—A T. SHOREY

A LONGER BOBCAT

John J. Murphy of 42 Van Wie Terrace, Albany, subscriber to THE CONSERVATIONIST, was pretty sure his bobcat was bigger than Sylvester Hoch's of Martinsburg—a photograph of which appeared in the last issue. To settle it, he scooped up the bobcat, popped it into a big paper bag and brought it to the office.

Spread out on the floor (it's natural position from now on because it's a rug) it measured 46½" from tip of nose to tip of tail, he said. We remeasured it and gave Mr. Murphy an inch, making it 47½. So anyway it was longer than Mr. Hoch's after the tanners got through with it.

It might have weighed close to the record of 44 lbs. in this State, but Mr. Murphy said the makeshift scales he used showed only 35 lbs. live weight. He sportingly admits the scales couldn't have been off over 9 lbs. (Hoch's 'cat was 38 lbs. dressed weight and 38" long, and also might have set a new live weight record for the State.)

Mr. Murphy was hunting near Windham Mountain in Greene County early in the deer season. He was seated up on a long slope with his back to some big boulders. Suddenly the 'cat (a female) came up the hill dead-on, stuck her head over a small rock, and then Mr. Murphy used his .30-.30.

4 DOES TO 1 BUCK

Reports mailed to the Pennsylvania Game Commission by successful hunters set the 1952 antlerless deer kill in that state at 37,829. According to these tags, 7,405 of the antlerless deer bagged were males, 30,424 were females. Thus, in the antlerless deer season the ratio of doe kill to that of bucks without visible antlers was 4.1 to 1.

NOTES ON BRUSH WOLVES

Brush wolves are blamed by Ontario trappers and hunters for a considerable decrease in deer and beaver populations. As a partial substitute for loss of revenue at deer hunting camps, some such camps are now advertising winter campaigns for wolf hunting with hounds.

Ontario's Minister of Lands and Forests is credited with the idea, and plans are going forward for promotion of wolf hunting as a winter sport and substitute source of revenue for the deer hunting which formerly brought many hunters into Canada. The winter of 1953-54 is expected to see several outfits in operation in various parts of Canada for such winter hunts—provided with guides, hounds and means for winter travel in the deep snow as well as comfortable lodges for this new winter sport.

—FRED STREEVER

DUCK BANDING BONANZA

A total of over 880,000 banding records of duck, geese and coot are in the files at the Fish & Wildlife Service's Patuxent Wildlife Research Station at Laurel, Md. Almost 120,000 recoveries of banded waterfowl have been reported by co-operators from various regions of the world.

Needless to say, banding is an essential tool to the development of a sound waterfowl management program. As such a tool, it provides data as to the delineation of migration patterns, value of breed and refuge area, variation in hunting pressure, longevity of waterfowl as well as indexes to population and kill—to name a few of the important aspects. For these reasons, the banding program has been greatly accelerated over the past year throughout most of the North American Continent, and it is no longer a rare occasion when a duck

hunter takes a banded bird during the course of a season's shoot. But a recent letter relates a rare incident in the trials and tribulations of a duck hunter:

Ken Otis, Jr. of Ellisburg, reported the shooting of four banded birds during the past season on the Lake Ontario marshes in the Town of Ellisburg. Coincidence enough that a duck hunter bags four banded birds in a season, but still more unusual was the fact that three of the birds carried bands of different origin. The date, as to the time during the season when the birds were taken, was not indicated, but other data relative to the banding is as follows:

Band #537-14099, Fish and Wildlife Service, Washington, D. C.; attached 9/5/52 to a mallard at Perch River Game Management Area, Town of Orleans, Jefferson County.

Band #1219, Pennsylvania Game Commission, Harrisburg, Pa.; attached 5/15/52 to a mallard at Wellesley Dam Waterfowl Propagation Area, Bradford, Pa.

And two bands of the Sealright Company, Inc., Fulton, N. Y., attached to two more mallards 6/1/52 at Stony Island, Town of Hounsfield in Jefferson County.

—John E. Wilson

NURSERY NOTES

The 1953 shipping season for seedling trees closed down during the last week in April, the earliest in 15 years. A very early spring made it possible to start tree shipments almost two weeks ahead of the normal time, and exceptionally favorable planting weather all through April should insure an excellent survival of trees planted this year.

Over 8,000 orders for 35 million trees were shipped during this season—and this figure compares favorably with that for last year. Orders received during the last two years have been exceptionally high because of the demand built up during the war and post-war years when production at the nurseries was at a low point. But most landowners were able to secure trees in the desired species and amounts; most popular were the Scotch pine and the spruces.

Nursery activities following the shipping season are directed toward the sowing of seed in several thousand beds to insure the high production figure set for the next few years. Incidentally, requests for trees for 1954 are beginning to come into this office—so don't wait too long to place your order. The first-come, first-served policy that has worked so well recently will be continued by the Department in 1954.

CORRECTION

After going to press with our last issue of this magazine, we found out that the Central New York Carp Derby (page 27, April-May) is being sponsored by the South Shore Sportsmen's Assoc. of Oneida Lake—and not by the Onondaga Anglers' Assoc. as we stated. Sorry.—D.G.A.

PENNSYLVANIA REJECTS INCODEL PLAN

In a report to Governor Fine last February, the Pennsylvania Water Resources Committee turned down the plan of the Interstate Commission on the Delaware River Basin (Incodel)* for the development and utilization of the waters of the Delaware River Basin. The Committee, which was appointed by Governor Fine, June 7, 1951, rejected the plan on the basis that it is mainly in the interest of New York City and northern New Jersey.

The Incodel Plan called for the construction of four reservoirs on the upper Delaware River. Three of these reservoirs would be in New York State: One near Cannonsville on the West Branch of the Delaware River; another at Barryville on the main stem, and the largest of all at Godeffroy on the lower Neversink.

In place of the Incodel Plan, Governor Fine's Committee stated that the future water supply needs of the Philadelphia area could be accommodated by the construction of reservoirs in the Lehigh River Basin and other Delaware River tributaries solely in Pennsylvania.

Pennsylvania's decision has had an effect on the case of New York City now before the U. S. Supreme Court. New York City has appealed to the Supreme Court to take more water from the Delaware River than permitted by the 1931 decision of the same Court. If the Supreme Court decision is favorable, New York City will construct a reservoir at Cannonsville at practically the same spot as the one planned by Incodel.

However, it is understood that New York and New Jersey are now exploring other possibilities according to which the two states might team up to assure a water supply vitally needed by both.

—Cecil E. Heacox,
Sr. Aquatic Biologist

* See "Liquid Assets," Reprint No. 113

New shoulder patch for Protectors

MORE DEBUTANTES AT DELMAR

Among the new animals at the Department's Delmar game farm, near Albany, are a baby hooded merganser (left) and baby woodduck

FISHERMEN'S SPECIAL

Fishing Long Island Waters, official organ of the Sportsmen's Council, Marine District of New York State, calls attention to riders of the Long Island Railroad's *Fishermen's Special* (see August-September, 1950 CONSERVATIONIST) that this year, for the first time, the special trains will make a stop at Mineola to accommodate Nassau County anglers. The Mineola stop will be made at 5:37 a.m. eastbound, 7:22 p.m. returning. The fare from Mineola to Montauk will be the same as that from Pennsylvania Station or from the Flatbush Avenue terminal and includes free tagging, icing of catches and Federal tax. The specials will run every Saturday and Sunday from May 16 to September 13.

WHAT A SNOWDRIFT DID

This is what happened to some nice young white pines growing on the lee side of a hill near Rensselaerville. The snow drifted in, light and fluffy; then it crusted, and later it settled, breaking out some tops, plucking out or shearing off branches. This happens fairly often in spots where snows tend to drift, principally in central New York.

FOXES ON THE MOVE

It's been known for many years that red foxes travel relatively long distances, especially during the fall and early winter seasons. An instance of this recently came to light which involved the State of Pennsylvania as well as ours.

In connection with an Allegany County fox trapping contest, a male red fox was trapped and ear tagged and released approximately 4 miles southwest of the Town of Friendship in January, 1953. On March 25, 1953, this Department received a letter from the Pennsylvania Co-operative Wildlife Research Unit stating that this fox had been killed by a Mr. Wm. Johnson about 5 miles northeast of Brockway in Jefferson County, Pennsylvania. Airline distance from the release point to where killed is 66 miles, and the elapsed time from date of tagging until the date fox was killed is about a year.

There's no way of knowing how many miles this fox actually traveled, but the information does underline the importance of the red fox as a spreader of rabies. There have been other instances in which red foxes are known to have gone distances in excess of 50 miles during a period of about a month. The incubation period for rabies is variable in different species of animals, but in foxes it is considered to be three to four weeks. So it is evident that an infected fox could spread rabies to a new area as much as 50 miles away before succumbing to the disease.

Since foxes are the primary carriers of rabies in both New York and Pennsylvania, it can be seen that it is very difficult to properly control this disease —which annually costs New York State an estimated $200,000.

—R. B. COLSON

PARKWAY NOTE

Jones Beach State Parkway Authority has announced completion of financial arrangements to start work on a comprehensive improvement program under an Act, signed by the Governor, designed to alleviate traffic congestion in Nassau County and improve approaches to Jones Beach State Park.

Fifteen million dollars have been obtained on loan by a group of banks and later the 40 million dollar bond issue authorized by the Act will be sold. The present loan is to be used to acquire property needed for the improvement of the Southern State Parkway in Nassau County, for start of construction of a six-lane divided artery to take the place of the present narrow and overloaded parkway built 20 years ago, and for acquiring rights-of-way for the extension of Meadowbrook State Parkway from Southern to the Northern State Parkway.

About 200 homes are to be moved or otherwise disposed of; there are plans for developing vacant areas nearby with larger lots, complete landscaping, local park areas and other liberal planning features to take care of the owners who wish to be removed.

When permanent financing is arranged, the balance of the arterial program will be put under construction —including the Meadowbrook extension from the Southern to the Northern State Parkway. This will follow a route along the edge of Mitchell Field approved by the Air Force, through the Meadowbrook Golf Club and Roosevelt Field, under agreements already made with the owners, to the Jericho Turnpike and Northern State Parkway at Glen Cove Road. Finally, the Wantagh and Meadowbrook Causeways to Jones Beach State Park will be widened to six lanes and parking space for 3,000 more cars will be provided along the ocean front.

The program will be financed through a 10-cent toll collected on the Southern State Parkway near the Queens border.

GAME FROM CANADA

Sportsmen can be assured of being permitted to transport their legal game bag out of Canada this coming season, now that the U. S. Secretary of Agriculture has rescinded previous orders which prohibited such importation because of the foot-and-mouth disease. The ban on importation of meat and animal products from that country has now been lifted, since no new outbreak of the disease seems likely.

HUNTER TRAINING

THE Junior Hunter Training Program, which started out as a spare time project for a group of safety-minded N.R.A. instructors, since the raising of the age limit for those who must take the instruction has become a stream which if not properly dammed will become an engulfing flood. Like a stream, it will run for months in a predictable channel, but when the proper season comes around it will become an uncontrollable torrent.

The fall of 1952 may have been just a taste of what we instructors are in for, and even then classes ran as high as 125 applicants. Instructors' 'phones were busy 17 hours a day, and in some cases applicants got the instructors out of bed at night demanding immediate instruction so they might hunt the following day. When refused, they reminded the instructor that that was what he was getting paid for. Of course, the efforts of these instructors, as we all know, are volunteered as a public service, and they receive no pay whatsoever.

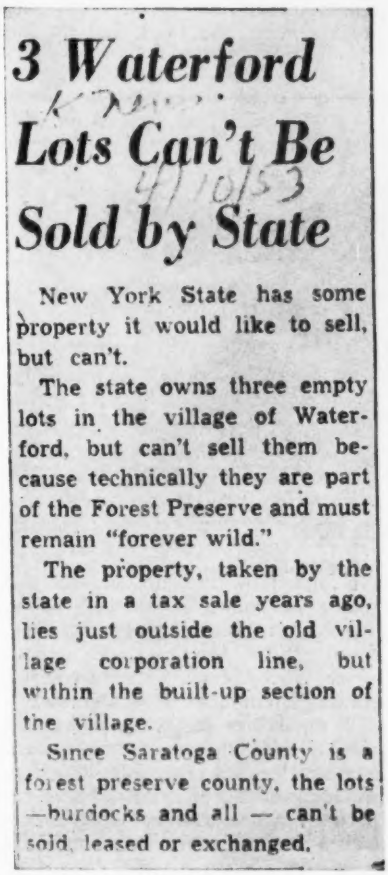
The program requires some means of limiting the number of applicants in any one class so that the instructor can feel confident that each person clearly understands every phase of the training. It is also imperative that no one be turned away, as this could lead to attempts to get by without a license rather than pass up at least part of the season. Also, it is very important that no instructor be so overworked that he is tempted to relax the requirements, shorten the period of instruction, or even give up his part in the program entirely. Too heavy a schedule could easily result in any one of the foregoing.

Monroe County has arrived at a solution that to date has proven very satisfactory from all angles. The instructors have banded together under the name *Monroe County Council of Junior Hunter Instructors*. They have pooled their efforts systematically and are now able to handle more applicants than they could previously working as individuals, and with less effort.

The system works very simply. The membership is divided into teams of two men each. They have established depots at two widely separated rifle ranges. Classes are held on the second Saturday of each month on one range at 9 a.m., and on the fourth Saturday of each month on the other range at 1:30 p.m. Two or three teams of instructors are assigned to each range. Thus each team holds a class every other month at the most, during the quiet months. During the pre-pheasant season rush it would be possible to hold four daylight classes on each range every weekend, and one night class during the week. Assuming a registration of 40 applicants per class (and this number can very successfully and efficiently be handled by two instructors working systematically) the organization could process 360 applicants a week, or 1,340 per month. But it seems doubtful if such a stiff program will ever be necessary; with proper advance publicity early in the year, enough people should be foresighted enough to want to avoid a last minute rush and get their instruction early.

Incidentally, it has been found that publicity material is much more readily accepted by the newspapers if it is presented in strict news form, with no particular credit accruing to persons.

—KING AURAND,
Monroe County Council



3 Waterford Lots Can't Be Sold by State

New York State has some property it would like to sell, but can't.

The state owns three empty lots in the village of Waterford, but can't sell them because technically they are part of the Forest Preserve and must remain "forever wild."

The property, taken by the state in a tax sale years ago, lies just outside the old village corporation line, but within the built-up section of the village.

Since Saratoga County is a forest preserve county, the lots —burdocks and all — can't be sold, leased or exchanged.

The clipping above, from The Albany Knickerbocker News, calls attention to one of the problems now being considered by the Milmoe Committee on the Forest Preserve. At its next meeting, the Committee hopes to be able to come up with a definite proposal for the solution of this problem.

AN EYE FOR AN EYE

I wonder if when March winds blow in April
The field and forest creatures of the earth
Don't wish their tender early-springtime children
Had not known such an early-springtime birth?
Beyond the pasture wall I saw two shadows
Outlined against the woods today at dawn.
When seconds later there was but one shadow
I knew the doe had hid her shivering fawn.
These last two April days since snow has fallen
I haven't heard the cardinal sing his song.
Small sacrifice for me compared to his
Of helping keep the eggs warm all day long.

When April breezes come a month too early
Wild creatures sense what man seems not to know:
That Nature matches every early favor;
March winds will come if early warm winds blow.

—GRANT D. MORSE, *Saugerties*

NATIVE GOOSE

John E. Wilson, District Game Manager of our Ontario-St. Lawrence District, reports that on April 9 a pair of Canada geese was received from the Delmar Game Farm and liberated on the Perch Lake Game Management Area north of Watertown. At this time there were several thousand migrant geese using the area, and the identity of the liberated birds was soon lost. Frequent checks on the area failed to disclose the presence of this pair, but on May 1st, in making a routine check of woodduck nesting boxes on the area, a nesting Canada goose was located apparently through laying and in the process of incubating. It was assumed that this is one of the liberated birds, but no effort has been made to check the leg band for fear of disturbance. Frequent observance has not disclosed the presence of the gander at the nest site or in the vicinity.

However, this is the only record of geese nesting in the vicinity of Perch Lake, and if it should turn out that the pair from Delmar is indeed responsible, it would appear that the future possibilities of establishing a resident breeding population of geese on this area are favorable.

DENTAL NOTE

How are your Uppers and Lowers? Ours really ache

Continuing the New York lake series regularly appearing in THE CONSERVATIONIST, we featured in the April-May 1953 edition Upper and Lower Chateaugay Lakes, lying in the northeastern section of the State about mid-way between Malone and Plattsburg.

Since publication of this piece a number of our readers have wondered: (1) if they were coming or going, or (2) which way we were going. Our red-faced suggestion for best reading these lake charts is to reverse your bi-focals or stand on your head, whichever is more appealing. The easiest way to correct the error, however, is to simply transpose the maps. The map at the bottom goes with the caption at the top, and vice versa.

After reorienting the lakes, Upper and Lower, we would like you to know that Robert Zilliox, the Department's District Fisheries Biologist in the Adirondack area, provided the information on these lakes. They're in his territory, not in the territory of the District Fisheries man located in Watertown whose name signed to this piece is Donald G. Pasko, not Pask.

When we bobble one, we boot it right out of the park.

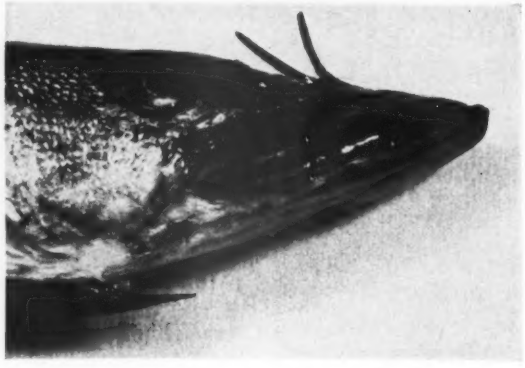
OLDEST LAKE TROUT?

Fish tags are received almost daily from anglers who thereby help to improve their sport, because the information disclosed through research projects involving tagging is often directly useful toward improving fish management. One of the most unusual tag recoveries recorded recently involved lake trout number A2073, turned in by Mr. Bruno Pisaneschi of Rome, N. Y. This fish was reported to be 22 inches long and to weigh 3¾ pounds.

The annual spawn-taking operations at Raquette Lake afford opportunity to tag many lake trout, and tag No. A2073 was placed on the dorsal fin of a 17-inch trout weighing 2 lbs., 2 oz. in October, 1941. A scale sample taken at this time showed this fish to be in its seventh growing season. In October, 1943 this fish was again picked up by the spawn-taking crew and measured as 17¼ inches, weight 2 lbs., 6 oz. And in October, 1946 it ventured into the nets for a third time and was measured as 17½ inches, weight 2 lbs., 2 oz.

So in 1953, when caught by Mr. Pisaneschi, this fish was in its 19th growing season. This seems to be the oldest recorded tagged lake trout in New York to date, although many other tag records from Raquette Lake indicate that similar growth rate.

—R. G. ZILLIOX



A HORNED PIKE

A northern pike measuring 20 inches was caught May 16, 1953 in Franklin Falls Reservoir by Mrs. William Cramer, Jr., 924 Broadway, Rensselaer. As the photograph shows, this fish had two horns on top of its head—a most unusual abnormality.

The two horns are slender, less than ⅛ inch diameter, made up of bone covered with skin except at tip. They are not quite symmetrical in size or location. The right one is ⅝-inch long, while the left is ¾-inch long. The right one is almost ½-inch in advance of the left one. They are about ⅜-inch apart at base.

If an injury started these splinters of bone growing out as "horns," there is no scar or other trace. The superficial head bones of pike and most other fish are formed by the skin, and for this reason are known as "dermal" bones. Possibly an early injury to the bone-forming tissue may have been responsible. The pike was in third growing season (determined from winter marks).

A number of people (including biologists and fish culturists who have seen and handled many fish) looked at the horns of this pike, but we have yet to find anyone who has seen a fish with a similar abnormality. So we believe Mrs. Cramer has the distinction of having taken a record pike head (if judged by the usual standards for buck deer) even though this fish was only a spike horn. A free subscription will be sent to anyone topping this record with a crotch horn pike.

—JOHN R. GREELEY

NEW FISHING GUIDE

As this issue of THE CONSERVATIONIST went to press, the Division of Fish and Game was just completing the distribution of the 1953 Fishing Guide to all license-issuing agents in the State.

After the very favorable reception of last fall's Hunting and Trapping Guide, sportsmen will probably wonder why this same idea for a simplified Conservation Law directory for fishing took so long to germinate and bear fruit; why wasn't the Guide available first thing this spring, along with the 1953 licenses?

The answer to the question is much easier than the solution to the problem; the Guide could not be printed earlier because we had to await the action of the Legislature and the Governor upon various fish bills. The Legislature adjourned on March 21st, but the Governor has a 30-day period of grace following adjournment to either sign or veto legislation. Accordingly, it was the latter part of April before the Department secured all the necessary information to prepare an accurate syllabus of the 1953 fishing regulations.

The new Guide follows and further improves upon the pattern established last fall by the Hunting and Trapping Guide. It sets forth—on a regional and county-by-county basis—the laws and regulations governing fresh water fishing in the State, making it much easier for fishermen to find out when and where and how they may fish for all fresh water species, and how many they may take.

Fishermen who have not as yet secured their 1953 licenses will receive copies of the Fishing Guide when taking out their licenses. Those who already have this year's fishing license may pick up a copy of the new Guide from any authorized license-issuing agent.

BEAVER TAGGING REPORT, 1953

COUNTY	BEAVER TAGGED	TRAPPERS REPORTING
Allegany	125	43
Broome	50	26
Cattaraugus	190	87
Cayuga	5	3
Chautauqua	343	128
Chemung	32	20
Chenango	63	31
Clinton	259	55
Columbia	1	1
Cortland	19	10
Delaware	42	19
Dutchess	56	22
Erie	39	15
Essex	572	91
Franklin	1619	232
Fulton	199	38
Genesee	28	16
Greene	74	25
Hamilton	1218	153
Herkimer	743	102
Lewis	619	79
Livingston	30	16
Madison	98	27
Oneida	85	31
Onondaga	15	6
Ontario	43	18
Orange	115	29
Oswego	72	27
Otsego	53	34
Putnam	65	18
Rockland	19	8
Saratoga	158	37
Schoharie	35	13
Schuyler	40	13
Seneca	0	0
Steuben	132	53
St. Lawrence	1281	205
Tioga	48	18
Tompkins	41	14
Ulster	89	33
Warren	320	50
Washington	70	28
Wayne	6	4
Westchester	0	0
Wyoming	61	23
Yates	22	12
GRAND TOTAL	9194	1903

OTTER TAGGING REPORT, SPRING

COUNTY	OTTER TAGGED	TRAPPERS REPORTING
Cayuga	0	0
Clinton	0	0
Dutchess	0	0
Essex	13	11
Franklin	41	32
Fulton	4	3
Hamilton	42	26
Herkimer	41	20
Lewis	10	7
Oneida	1	1
Onondaga	0	0
Orange	0	0
Oswego	1	1
Putnam	4	4
Rockland	0	0
St. Lawrence	35	24
Saratoga	0	0
Ulster	0	0
Warren	6	6
Westchester	0	0
TOTAL	198	135

TWO IN ONE

We recently received the story of what sounds to us like a fox trapping record, and if anybody can tie it we'd like to know about it. (We doubt if anybody can beat it.)

"On June 22, 1952, I caught two foxes in one trap at the same time. This happened while I was trapping for the State on the rabies control program in the Township of Troop, near the Village of Troop, in Cayuga County.

"In a cornfield that had been recently cultivated, signs of a number of fox were in evidence, so I made 12 dirt hole sets in a radius of about 500 feet with # 2 Victor fox traps. Next morning I had six fox; two of them were in one trap, one caught by the front foot, one by the back, and both nearly full grown fox. Exactly how it ever happened, anyone's guess is as good as mine."

—H. Amidon, *Seneca Falls*

'PLANES AND PORCUPINES

Sometime in November of 1945, a man by the name of Henry Sneck, a member of Niagara Mohawk hunting club, was hunting on Bullhead Mountain back of 13th Lake when he came upon the wreckage of an airplane. Another member of the party, Otto Diezinger, took several pictures. Steve Miller, visiting the spot a year later, picked up the distributor shown above.

The story of the crash as I get it was that a pilot and two girls were flying from Plattsburg to Rome. Confused by a heavy fog, the pilot didn't clear the mountain. Miller tells me the engine and other parts of the plane are still where the plane cracked up.

G. J. Carmichael

• And then the porcupines got to the plane — particularly the distributor shown in the photograph. For this information, thanks to Asst. Dist. Game Protector Griffith.

FPA NOTES

• A co-operator under the Forest Practice Act in Schoharie County recently had a very rewarding experience with the marking service of the FPA. Several months ago a timber buyer offered him $600 for all the timber in two woodlots from a 12" stump diameter. The buyer had drawn up the contract and made a $50 deposit. But luckily enough, the owner did not sign the contract, returned the $50, and decided to obtain the advice of a Department Forester. A tally of marked trees showed 57,000 board feet of timber to be cut —including 38,000 board feet of hard maple, the value of which is more than twice the original offer of $600. Furthermore, many smaller trees, which would have been cut, now remain to make up the future stand.

• A program of forest assistance was recently initiated by the St. Regis Paper Co. of Deferiet. The company is interested in co-ordinating its efforts with the District FPA program and in encouraging and assisting in reforesting nearby idle farmlands with tree species that will be suitable in the future as pulpwood. The company offered its tree planting equipment to owners at a cost of $3 an acre if planting assistance is desired.

• A serious disease or condition in a maple sugarbush owned by Stewart Decker, near Dickinson Center in Franklin County has caused considerable concern. A severe ice storm several years ago broke off the tops and branches of many maple trees in this stand, causing a die-back of the trees similar to that on birch. This has been observed in a number of sugarbushes in the area.

Fishermen's Clinic

DOWN in Westchester County, the members of the Southern New York Fish and Game Association have come up with a new idea, or perhaps it would be better defined as the collection of fish and fishing know-how in a new package which they call "Fishermen's Clinic."

Now there is nothing unique about the Southern New York Fish and Game Association except its size (7,000 members). These members found (as have sportsmen everywhere) in their "hot-stove league" discussions of fish and fishing that certain of their cohorts almost never came home empty-handed. Even discounting the inherent tendency of fishermen to magnify the size and multiply the number of their catch, it was apparent that the consistent "bacon-getters" had something on the ball other than luck. They simply knew where and how to catch more fish more often than the average fisherman.

This kind of "know-how," once acquired, is usually about as difficult to extract from the possessor as getting Jack Benny to divulge his age. But the sportsmen of Westchester have a problem—they have too many fish and they're catching too few. In many of their lakes they can't "see the bass for the bluegills or the pickerel for the perch." In mulling over this situation (and appreciating the fact that all waters have definite limits of fish pound production) they arrived at several basic conclusions: (1) There was nothing fundamentally wrong with their lakes that couldn't be greatly improved through the removal of large quantities of pan fish presently competing among themselves (and with the game fish) for a limited food supply. (2) The abundance of all kinds of pan fish in their lakes represented a poorly-publicized and little appreciated resource. (3) Thousands of their own Association members, informed of how much fun can be had fishing for these pan fish and how good they are to eat, could make an appreciable dent in their overpopulous numbers, provided they had some of the "know-how" of the few, perenially "lucky" fishermen members. (4) Show to the majority of the members the consistent fish-getting tricks of the minority—for the mutual benefit of all.

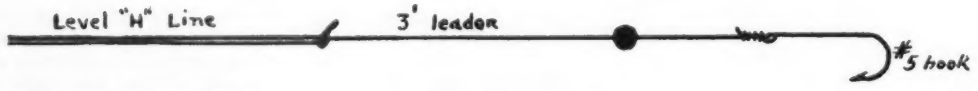
Thus was born the "Fishermen's Clinic," a regularly scheduled panel discussion by the "lucky" experts, directed toward the education of the would-be experts, and more importantly, toward better fisheries management of their waters.

Just to indicate the kind of dope, produced at sessions of the Clinic, we offer the recommendations of Marcus ("Doc") Weiss of Yonkers, one of Southern New York's "lucky" fishermen, who shows three ways of rigging up for white perch—one of the species that needs more catching in local waters. Variations of his "rigs" and system are equally effective for other pan fish species, and ought to be useful to those who have similar problems in warm-water fish management—and a similar inclination to solve them.

—AL. BROMLEY

TROLLING

This rig used with casting rod, two sets double-bladed spinners, the bottom set being somewhat smaller than the upper. Follow spinners with #5 hook on a 4" snell. Bait—night crawler. Take your time on a strike, give a little slack, then strike short.

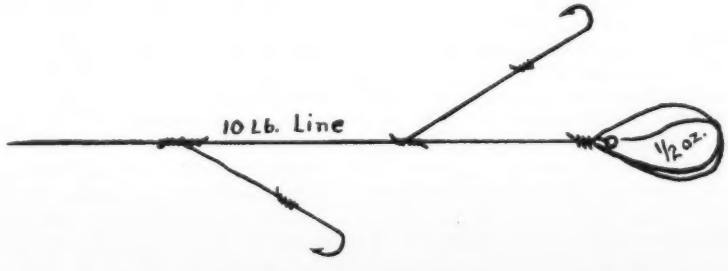


STILL-FISHING—MID-DEPTHS

Best done from a boat using fly rod, level line, 3' leader, #4 or #5 hook, double 00 buck about 1' above hook. Bait—night crawler, (white portion preferred). Perch bug or crawfish also good. Fish the bottom first, gradually raising the bait until feeding level of fish is located (frequently about 6' below surface for white perch). Give striking fish a little slack, then short strike—not too heavy. May help to "chum" with a few pieces of cut bait.

BOTTOM FISHING

This rig fished with casting rod. Use "dipsey" sinker, half ounce, at end of line. Rig two snelled hooks, snell length apart, to fish one on bottom, the other about 10" above bottom. Bait—worms preferred.



LETTERS

TO THE EDITOR

THAT OLD GUN

Dear Editor: In the interest of public safety, the photograph heading the extremely interesting article (Dec.-Jan. '52-'53) by my friend Fred S. Streever on Adirondack coyotes deserves further comment.

The caption accompanying the interesting photo tells us that the redoubtable veteran fox hunter uses his fifty-year-old Winchester lever action 10 gauge shotgun with modern shells, loaded with 4¼ drams smokeless powder behind 1 & ⅛ths oz. of "chilled" shot. (Incidentally, for the past eight years or so, all shot has been of the "chilled" variety.)

While this combination of gun and ammunition has served this doughty old houndsman admirably in his pursuit of various and sundry "beasts chaseable," ordinary sportsmen should know that the Winchester people unequivocally warn that this type of gun is highly dangerous to the shooter when used with such ammunition. This old type gun was not designed to handle this modern maximum smokeless load, simply because such ammunition was not loaded at that time, and its use is regarded as highly dangerous. The use of this type of gun with high velocity shells is in about the same category as using this type of ammunition in a gun with the socalled "Damascus" barrels, but in the case of guns of Streever's type, the Winchester folks worry more particularly about the action, rather than the barrel.

Mr. Streever knows all this, but the old warrior seems to feel that Diana, the Goddess of the hunt, holds him so especially dear to her heart that not even a blown up gun is anything for him to worry about. However, others who are not so confident of their good luck should abjure the use of such a combination of gun and ammunition—and we should all pray fervently that the breech block of Streever's old gun continues to stand up against ammunition which it was not designed to hold. May his luck never run out, for there never was a finer oldtime fox hunter than Fred S. Streever.

Henry N. Jones, Cloyne, Ontario

• *Prof. Henry Jones is dead right about his warning against using modern hi-pressure ammunition in old fashioned guns. Another friend, J. R. Matson (the bear and cat hunter of Perry, N. Y.) sent me the same caution; he referred to my 10 gauge 50-year-old Winchester as a "tired old gun."*

Only an old fool would be such a fool as I have been and continue to get worse. However, now that a permit can be secured for hunting and hounding of brush wolves in New York State and for using adequate rifles and coarse (i. e. buckshot) there should be no "excuse" for abusing "tired old guns" by "tired old hunters."

I might point out, however, that even modern firearms can be highly dangerous at either or both ends. I have lost the hearing in one ear from the blowing open of the breech block of a .35 caliber "semi-automatic" "modern" rifle, and have had a modern double barrel shotgun with single trigger shoot off both barrels at once, and separate the barrels—fore end and butt—so that they fell separately to the ground from my astonished hands.

My hunting goes back to the days of black powder and muzzle loaders; you can get quite a surprise from one of these when in moments of excitement you reload and forget to remove the ram rod. Dropping a handful of tenpenny cut nails down a muzzle loading barrel is bad technique too.

But you can "get dead" just as quickly by shooting your "modern shotgun" while it has **snow or mud or a dead stick in the barrel.**

All of which just goes to prove that Prof. Henry N. Jones (whose good advice and notes on the outdoors are frequently published in Canada, England, and U. S. A.) is a man of sound judgment whose words of caution should be heeded.

Fred S. Streever, Bolton Landing

OUT-OF-STATERS

Dear Editor: My family and I camped last summer for two weeks in the Adirondacks at a public campsite—as we had done before when still residents of New York State. I would like to say that campsites all over New England also have their considerable proportion of out-of-state campers, including many from New York. So the situation would seem to even out and adjust itself, and the opportunity to camp in other states to be reciprocal. I feel discrimination against out-of-staters anywhere would be a mistake.

Basil C. Gray, Wellesley Hills, Mass.

BOBCATS

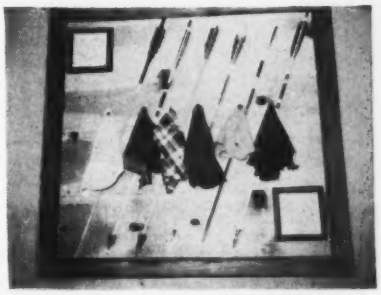
Dear Editor: In the February-March issue, page 38, I found the letter "Facts on New York Bobcats" very interesting.

In your answer to Mr. Charles Lutsko's question: "What is the largest bobcat ever reported to the Conservation Department and about how many pounds did it weigh?" you stated that the largest ever reported was 45 pounds.

This 45-pound report can be raised to 53 pounds. In 1949 during the deer season, I shot a bobcat in Essex County, in Keene, New York (where I am now a licensed guide for this area) that did weigh exactly 53 pounds and measured from tip of nose to the end of tail 47 inches.

For the information of your readers who might say that this bobcat must be a Canadian Lynx, it is not. I still have the cat mounted into a rug and the markings are those of a bobcat. In the area where this cat was shot, there are tracks that I have seen that can match (and some maybe beat) the ones of my cat. These tracks were seen only this last fall.

John I. Lashway,
Chief Deputy Sheriff
of Schoharie County



YOUR SHIRT

Dear Editor: I am enclosing a photograph of a plaque which is probably the only one of its kind in New York State. It is a trophy plaque composed of the shirt tails of the bowmen of the Hudson Fish & Game Club, who shot at and missed a deer during the last hunting season. Under the shirt tails are the arrows with which they missed the deer.

As you no doubt know, the custom of cutting off the shirt tail of a hunter who shot at and missed a deer has been practiced for many years in the deer hunting camps of the southeast and deep south of our United States.

Since novel activity of this kind creates interest in organized archery (and the archers are the only deer hunters in this State with a clean bill of health) I thought you might be interested in the foregoing.

Bill Rice, Leeds

TO THE RESCUE

Dear Editor: Enclosed please find a newspaper article and pictures of a deer rescue operation which I performed last fall.

Guy R. Milroy, Ass't. Game Protector, Poughkeepsie

● *The rescue operations, described in detail in the November 2 issue of the* Poughkeepsie Sunday New Yorker, *involved hauling a doe from a deep pit on a farm in Robinson Lane, Fishkill Plains. Protector Milroy roped the doe and with the help of John Alley and Arthur Van Tassell (who discovered the deer in the pit) succeeded in getting it out and setting it free.—Editor*

DUCK BLINDS

Dear Sir: The members of the Red Jacket Rod and Gun Club, Inc. of Cayuga Lake Park, wish to call to the attention of the people of this locality and particularly that of the officials of the Conservation Department of the State of New York to a dangerous condition.

For some years past, hunters in quest of the elusive wild duck have been permitted by the Conservation Department to erect duck blinds off shore with no limit as to size, number or distance from shore. As a result, hundreds of stakes of all sizes and lengths have been driven into the bottom of the lake as a foundation for these blinds.

It is indeed a picturesque sight in the hunting season to travel along the lake and view the various types of blinds built by these most ingenious pursuers of wildfowl, but alas, at the close of the season they depart with their ducks, if any, leaving a tangled profusion of bare stakes and half dismantled blinds to bear mute testimony that "Clancy" was here. This is indeed a dangerous and menacing condition throughout the length of Cayuga Lake, but even more so at the lower end from Mud Lock to Canoga Point and in close proximity to the State Park, and from shore to shore.

We have no desire to discuss the merits of granting this permission and the failure of those hunters to remove their bases of operation, but we do go on record as asserting that the resulting condition creates a dangerous hazard. Not only is it dangerous to navigation, but to the pursuit of boating in any form, particularly after sunset. Likewise to swimming, as many of the stakes are submerged or partially so.

For these reasons we suggest that the State remove or cause to be removed these unsightly and dangerous obstacles, and if the practice of allowing their replacement or erection in the future is to be continued, to provide and enforce such measures that these undesirable conditions will cease to exist after the close of the hunting season, as a menace to the safety and well being of our people. Let us act before injury or possible tragedy comes to some one dear to us.

William J. Bonard, Secretary

● *This Department is mandated by Section 200 of the Conservation Law to make regulations in relation to the taking of water fowl which conform with Federal regulations. Until such time as Federal regulations provide for the removal of stakes and blinds, or the Conservation Law is amended, it is not within the scope or the authority of this Department to order such stakes or blinds removed.*

But you certainly have a point, and quite possibly some amendment to the law, or new legislation, is required.—Editor

MUSKRATS ON THE MOVE

Dear Editor: Will your key unlock the door to this riddle? On our Wildlife Refuge is a small lake a quarter mile off the highway. A huge beaver dam blocks the outlet. Cattails and tall marsh grass grow in profusion—apparently an ideal home for muskrats. No trapping on the Refuge for years, and the 'rats have annually multiplied.

One night in late January after a 2-inch fall of new wet snow, these 'rats staged a mass-meeting and decided to emigrate in a body. They came up onto the highway, then separated going in two directions. At least a dozen were killed by cars; others were observed next day humped up along the road on the scraper banks for a distance of at least one mile.

Studying the tracks leading from the lake it is apparent that they moved in a body; if not they certainly all came out over the same route. Several old time Adirondack trappers and guides have come up with answers, but no two of them gibe? What happened?

Willet Randall,
The Ark Wildlife Refuge
North Creek

● *We forwarded this most interesting letter to Prof. Hamilton at Cornell, and his article in this issue is the result.—Editor*

LAKE GEORGE SALMON

Sirs: This letter is the report of catching a tagged fish in Lake George, N. Y. I have heard that all tagged fish should be reported.

The fish was a landlocked salmon weighing slightly over 5 pounds and measuring 23 inches in length. My father, David H. Dugan, Jr., hooked the fish while trolling with a red and white spoon in 15 feet of water. The salmon fought very well and jumped three times. As soon as we had landed him, we noticed the tag on the dorsal fin. The fish must have been hit by a boat because one of the small belly fins was partially missing and there was a wide scar on the back of his neck.

I have inclosed the tag. It says: N. Y. C. 9454. I neglected to mention that the fish was taken about one mile from the southern end of the lake on the western side.

David H. Dugan III, No. Caldwell, N. J.

● *This particular salmon is especially interesting because—as a result of your information—we have all the relevant facts about him. This salmon was finned-clipped at the Cambridge (Washington Co. Hatchery) before he was planted in the spring of 1948 in northwest Bay Brook; the tag was placed on it last November. In addition, the age and growth history of this fish are known from winter marks on his scales, a sample of the scales having been taken when the fish was netted November 17, 1952, off the mouth of Indian Brook.*

This fish is unusual in that there was about 30 per cent regeneration of the left ventral fin; most clipped fins show no regeneration. Furthermore, the type of growth shown by scale examination was unusual, in that change to rapid rate took place at three years; most salmon move out of the brooks and into the lake at one to two years. The last three years of growth were of the usual, more rapid type shown by most Lake George fish. This salmon was six winters old when caught.

To add to the unusual facts, your weight scales and ours checked exactly at five pounds last fall and this spring. And the measurements checked very closely; 22¼ inches last fall; and 23 inches on recapture. No growth is to be expected from November 17 to early April. And the small difference in measurements (¾") may be due in part to the fact that fish stretch slightly when dead.

Another unusual fact: I believe this is the first salmon tag reported by a non-resident angler.—John R. Greeley

.22 BIRD SHOT

Dear Sir: Would you tell me whether there is such a thing as "bird shot" for a .22 calibre rifle? Also how accurate this would be? And if it is still manufactured?

Jon Crawley, Clifton Springs

● *Yes, you can get it. They shoot flies and break miniature clay pigeons with it.—Editor*

BEAVER TRAP

Dear Sir: You had a piece in the Feb.-Mar. issue about trapping beaver, with Nick Drahos telling how to trap with a crotched pole. With only a No. 3 trap he may get the baby beaver, but not the beaver over 60 inches.

A 6-inch trap is no good to get big beaver; you will get 1 out 10. We have beaver with feet 8 to 9 inches long. I will be glad when the 7 or 8 inch traps come back.

Observer, Stillwater Mountain Tower

● *For the new law, see article on legislation in this issue.—Editor*

RAIDER OF CELLARS

Gentlemen:—I shall greatly appreciate your help in identifying this raider of my root cellar, liking carrots and avoiding all poisoned grain. Finally caught with trap baited with sliced carrot.

Fur is like mole skin. Paws delicate, unlike mole's insofar as digging is concerned, but does a good job uncarthing roots. Note large circular ears with opening as shown. Delicate nostrils and solid upper teeth with two incissors below. Tail somewhat furry and not of rat class.

Col. Sidney Hammersley, Waterford

● *From the description, our guess is a field mouse.—Editor*

DIVER

Gentlemen: In your publication *The Conservationist* I notice you generally have a page describing the characteristics of some lake. I am in the diving business and those charts of the various lakes are very helpful in determining the conditions I will find, should I have occasion to dive in that water. We dive winter and summer (pulled a truck out of Schroon Lake last winter) and anytime I can be of service just let me know.

John S. Lawrence, Duanesburg

● *We sure will.—Editor*

GALWAY LAKE

Gentlemen: In reading your recent edition I saw where they are considering Galway a posted lake. I am not a believer in an association issuing orders as to who is to fish and when he may fish. I have a camp on the above lake, but never have belonged to any association.

In reference to the letters you have received saying that you could not put a boat on Galway without a fee, I say that is not true. Mrs. Slaguo, who runs the Rose Garden Tavern, has never objected to the use of her waterfront and does not charge a fee. There is a store just around the corner from her tavern (called "Mac's store") where one may also use the waterfront as one wishes.

I have a camp in the Adhabor section. We do not have a waterfront but have a right-of-way plenty big enough for anyone to put a boat in. On several occasions people have used this and never has there been a complaint. This right-of-way I am referring to is by the creek that runs out of Butterfield's Pond and runs into Galway lake. It is next to the property formerly owned by Dr. Wilson of Amsterdam.

Armand W. Giovanni, Amsterdam

RECIPROCITY

Dear Editor: I plan to fish the Upper Delaware this year, and I would like to know what the regulations say about a New York resident with a New York license fishing from the Pennsylvania side of the river. For instance, if I catch fish by wading or from a boat, could I go ashore with the fish on the Pennsylvania side, or must I return to the New York side? I'll appreciate any information you can give me on this point.

John F. Viking, Elmhurst

● *Authorities in Pennsylvania will permit you to fish on the Pennsylvania side of the river if you're in a boat or wading and if you have a New York license. But DON'T enter the river from the Pennsylvania side or go ashore on the Pennsylvania side; they will pick you up as being unlicensed by Pennsylvania.—Editor.*

YOUR VISION, SIR?

Dear Editor: I am certainly in favor of having licenses issued from central or regional agencies as you suggest, and if that ever takes place I should think it entirely reasonable that a potential hunter be required to take a test of his vision. If you can require a man to take a vision test before issuing a driver's license, you certainly should do it before handing him a gun and turning him loose on society.

Please do not misconstrue this as a blanket approval of the type of vision test given in New York State. It is far from adequate in many ways. States like North Carolina have a much more comprehensive vision testing program. It includes color testing, vision in each eye plus with both eyes, ability to fuse the image seen with the both eyes working as a team, and perhaps most important of all, the extent of the field of vision. Many people feel that they have good vision. I have seen many of these, and by a simple comparison with what they should see I have been able to show them how grossly inadequate their vision actually was.

Are you one of these? And if you don't think you are, what makes you think so? They say that if you never had anything you don't miss it. Plenty of people never had good vision, or have gradually lost it a little at a time over a period of years, and consequently don't miss it.

I hope I don't run into too many of these the next time I go hunting. Although they may not miss their vision, they may not miss me.

Joseph J. Melita, Optometrist, Johnstown

INCIDENT ON SPRUCE MOUNTAIN

Dear Editor: I have read the letter on starting forest fires in the April-May issue sent in by Francis Buff of Watervliet. I want to straighten out Mr. Buff and any readers of the article, and I only regret that it cannot be done before the next issue is published.

Upon reading Mr. Buff's letter I immediately investigated the matter and have this to say:

All visitors to our fire towers are asked to sign the register. Upon examining this register we find that on the date of Mr. Buff's last visit to the Spruce Mountain tower, there was also a group of boys present, some from Saratoga. Our Observer on Spruce Mountain (who has been with us for nearly six years, and whose integrity is unquestionable) recalls the day, as he knows Mr. Buff. On that occasion he, the Observer, came down the steps of the tower to converse with another visitor, leaving a group of young men in the tower for a few minutes only. It is our belief that one of these young men took it upon himself to "show off" by telling the others he was a relief Observer or something of the sort, and then proceeded to further elaborate by telling the things of which Mr. Buff speaks. Possibly Mr. Buff (or any others present not knowing him) took it for granted that he was telling the truth.

I want to say this, that at no time within the past six years has there been a substitute Observer on Spruce Mountain tower. I also want to say, especially for the benefit of the lad who may have "spun the yarn," that if as a result of his story more fires from careless smokers do occur, we wish he could be in on fighting them. We are pretty sure he would change his mind.

G. E. Stewart, District Ranger

● *So are we. We're also glad to have the record straight.—Editor*

TRILLIUM

Dear Editor: Would like to know where the Trillium picture (2nd cover, April-May) was taken in Washington County. Would like to see where they grow like that.

Frances Bullock, Rochester

● *On Route 40 between Greenwich and Argyle. About 4 miles north of Greenwich, on the right hand side of the road. Visited the trillium colony again this year, on May 16, and found it at its peak.—Editor*

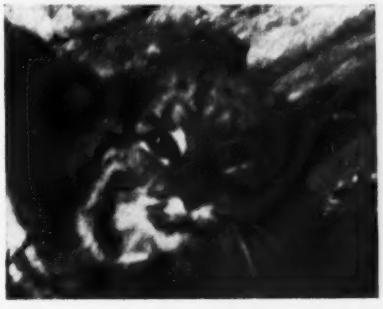
CLOSED TO SEAPLANES?

Gentlemen: Reference is made to a statement on Page 28, "The Back of The Book" in the April-May, 1953 issue, under the heading "Closed for Alterations," to the effect that (under Herkimer County) the "Trail from Beaver River Flow to Salmon Lake" is closed to public use.

In this connection, would there be objection to reaching Salmon Lake and Witchopple Lake via hydroplane for fishing, thereby not in any manner using the trail above mentioned?

Purdy A. Kinkaid, Cohocton

● *The area you mention is closed to public use, no matter how you get there. Sorry.—Editor*



NOTE ON BOBCATS

Dear Sir: Maybe *The Conservationist* could use a couple of pictures of bobcats that I caught in my traps.

I had a letter in *The Conservationist* last year about a bobcat I shot while hunting deer. I sent the cat in to a taxidermist for a head mount and to have the hide tanned. Got the head back but no hide. So I hollered like hell and pretty soon the taxidermist sent back a hide but with the head still on it. So they called it the two-headed bobcat.

L. Paul Wood Jr., Hammondsport

SKI-FOOTED DEER BAGGED

Ohio deer season runs from Thursday through Saturday, but odds are long against any hunters bringing down a deer like the one shown here. It's a ski-footed deer and was shot by Arthur Mayer near Buffalo recently. Mayer said he was amazed at the speed at which the deer traveled over the snow. The New York State conservation department wants the feet to study the deformity. The feet are similar to skis.—(AP) Wirephoto

Dispatch
Columbus Ohio 12-7-52

SKI-FOOTED DEER

Dear Editor: This morning's mail brought to hand a letter from a Mr. Elmer J. Gilkerson of Columbus, Ohio in which Mr. Gilkerson included the enclosed photograph and clipping. The clipping mentions that the New York State Conservation Department wanted the feet of the ski-footed deer for study. I do not recall any subsequent discussion of the animal's deformity and am interested in learning exactly what your Department's findings may have been.

V. M. Kraft, *Field and Stream*

● *Normally deer walk high on their toes and the constant wear keeps the hoofs down to normal proportions. We have noted that where deer are in captivity and are in very soft or muddy ground, their hoofs tend to increase greatly in length and present the so called "ski-footed" appearance. In some instances this deformity is caused by fracture of a leg bone resulting in an abnormal alignment of the healed bones and allowing the hoof to point straight out instead of downward. In the case of the specimen photographed, where all four feet are involved, I would guess that the abnormal alignment of leg and ankle bones was congenital, unless this deer escaped from captivity where the underfooting was awfully soft. The latter possibility is very unlikely.—E. L. Cheatum*

PASSENGER PIGEONS

Dear Editor: In reading my April-May *Conservationist* I am greatly pleased with the story about passenger pigeons. This story corroborates those of my father and grandfathers, and that is what makes it so interesting to me.

We know that many of these birds died at the hands—or rather by the guns and nets—of ruthless killers, but that in itself could not have exterminated them, as they were so vastly numerous and such great multipliers.

Two old salt sea sailors have told me at different times, in far flung parts of the U. S. A. of a great snow storm at sea when these birds nearly sank their ships. They said it was impossible to see a rod in any direction, so dense was the storm. The boats were already overburdened with the cargo, and the snow on the decks and in the rigging made it almost impossible to control the ships. Then the pigeons came in hordes. So great was their onslaught that the ships became so topheavy they swayed like a drunken sailor. They said that at times the decks were nearly three feet deep with dead, dying and living birds. The sea around them also a jetsam of pigeons. They fought them with everything at hand but still more came until long after night fall, when they seemed to have left them.

This story was told me by Uncle Launt Hanmer when on a visit to his nephew, Henry Hanmer, at Lake Placid, N. Y., and by Ole Andersen of Pattaway, Calif. These men were on ships sailing in opposite directions, but in about the same latitude.

L. H. Gillies, Nantahala, N. C.

ONEIDA LTD. MALLARDS

Gentlemen: I would like to make a correction of the information that was given to you in the letter from young Mr. Krone of Sherrill (Page 38, April-May), inasmuch as an employee of Oneida Ltd. I have been quite intimately associated with the mallard ducks of which he speaks.

The ducks literally lead the life of Riley here in our pond. They are so well fed and cared for that they no longer migrate in the winter, preferring to stay here, and they appear at the doors of various departments for their usual hand-out. I have also chipped in, as have many others, toward the bag of grain that is bought and used for them periodically. Every spring when the females feel the call of motherhood they are carefully tended by one of our guards in his free time, who constructs pens to keep out marauding dogs and other predators, when the little ducklings appear.

Mr. Krone speaks of car drivers wilfully killing these ducks. These ducks are in the habit, as I stated, of wandering around the street and the company property for their tid-bits, and I have seen great tractor-trailers stop to let them across before proceeding. If a few have fallen victim of cars or trucks, it has been unavoidable, I am sure. In fact, a duck has much more chance of getting where he wants to go than a human when it comes to crossing the street.

Mrs. Edithe Pitt Downing, Oneida

BOTH FOR CATS

Dear Editor: It is very evident that many of your readers have no knowledge of the great economies to be derived from cats (many cats) especially to the home vegetable garden. It so happens that I have a neighbor who raises cats—or rather the cats raise themselves in large quantities, knowing nothing about birth control. The result is of course that this man has entirely too many cats to feed and they have to seek nourishment elsewhere.

Now every good gardener has a compost heap in which he dumps all his garbage, weeds, leaves, etc. and quite naturally the odors therefrom attract cats from great distances, and my neighbor's cats throng to it—and there they stay forever and ever, until they are entirely decomposed along with the compost and deposited on my garden. This compost is delicious—I buy no fertilizer.

But I have another very selfish neighbor. He is a successful farmer and keeps his cat population down to normal by some method unknown to me, and I get none of his cats.

Here's to bigger and better cats.

Frank Whitney, Cherry Plain

Sirs: Just want to tell you that should the proposed law (to give outrageous freedom to shoot cats) be passed, I shall immediately post my land against all types of trespass and urge others to do the same.

It just happens that farmers *need* cats.

R. L. York, Binghamton

BEAVER INFLATION

Dear Sir: After reading the article in last issue regarding the "inflation" method of skinning beaver, I couldn't resist trying it out. Very interesting results:

After inflating a "blanket" I started skinning and found that a bubble had formed on the beaver's navel. This was carefully avoided with the knife, but accidents will happen, and this bubble was pricked with the knife point. Did you ever stand by and watch a tire hissing happily as it went flat? Well, that is just what happened to my beaver. And Brother, I was back on the old time of one and a half hours of darn hard peeling to get the pelt removed.

On the other four of my catch I was very careful of this bubble. Will say that the "inflation" method is a decided help to any tired beaver trapper. Now, if someone would only find a way to inflate the price of beaver pelts—well, that would be nice.

C. A. Wambold, Elmira

RAVENS AND VENISON HAWKS

Dear Editor: My parents lived on a farm at Boreas River (Essex Co.). Nearly every winter we would see a few ravens. I even saw one caught in a fox trap, so there was no question as to its identity. But after 1908 or '09, they were seen no more. Later, after I left the North Country, I went back nearly every fall deer hunting for several years. My perennial question to the old woodsmen and hunters was—Had they seen any ravens? They all agreed they must have become extinct. But two years ago I talked to an old hunter and former guide, and to my surprise he said he had seen two ravens where a deer had been dressed during the hunting season. Have you had any reports of any ravens being seen?

Second question: We had a bird known locally as a venison hawk. It was not a hawk, I am sure. It was about the size of a sparrow hawk and its flight was much the same. As I remember it was slate color along the back and light colored underneath. It had a head and beak much like a shrike, and I believe it was seen only in the fall and winter so it may have been a migrant. It probably got its name from the fact it often showed up soon after a deer had been killed and around deer camps. It disappeared in that section at least about the time the ravens disappeared. I have found no one who has seen the bird in recent years or what its real name was.

Jerome R. Hyatt, Chatham

● *Ravens are reported fairly often in this State, particularly in the Adirondacks. The Canada jay is known as the venison hawk, and is frequently reported in the North Country.—Editor*

EAGLE VS BEAVER

Dear Sir: I have been trapping beaver in the Dutch town section. Sunday morning I found one beaver in my trap completely torn apart and another with several holes in its skin. Thinking this was done by some animal, I reset the traps, and this morning I had a bald eagle in one of them. The eagle was in the water and was dead.

Ernest King, Mayfield

TIP-UP STORY

Dear Editor: I don't know if this letter will be of any interest to you but what I am writing actually happened to my husband: On April 1st of this year in the evening he and I went fishing in Oneida Lake. About 9 p.m. my husband thought he had a strike, yet it didn't seem just like a strike. Anyway he set the hook and

reeled in his line. He had hooked onto a live fat pickerel about 24" in length, which was still hooked to a tip-up from ice fishing this winter. We cut the fish loose from the tip-up, but could not get the hook out of its mouth. We put the fish back in the water and it seemed as though it could not adjust itself to stay down and swim in deep water. After staying around the top of the water for about 10 minutes and often going down—but only to come right back up again—it did go down into deeper water and swam away. We presume the tip-up had more or less been pulling the fish to the top of the water.

We contacted the man who owned the tip-up. He said the last time he had been out to his tip-ups was around the middle of January, just before the ice broke up. So according to that, the fish had been swimming around with the tip-up in its mouth, yet still being able to eat, for about 2½ to 3 months.

Mrs. Edward J. Smith, Syracuse

THE STERLING BLOCK UNBLOCKED?

Gentlemen: I am enclosing my check for $1.50 in payment of a subscription for Mr. Jones. Will you please send him the magazine. I am writing Mr. Jones that he can send me the equivalent in postage stamps for my collection.

Martin Goldwasser, Brooklyn

Gentlemen: I feel that a subscription to *The Conservationist* is worth more to help British-American relations than are many of the Federal government's projects. (Check for $1 enclosed.) Certainly there is no other place where a 1953 dollar brings 1939 quality.

L. William Goodmann, Ithaca

Dear Conservationists: For the sake of amiable Anglo-Adirondack relations, please don't let Mr. Jones go without the best publication of its kind in print. ($1 enclosed). Bill me for his renewal if the sterling block continues.

Freeman D. McManus, N. Arlington, N. J.

Dear Editor: I have just read that Harold V. Jones wishes to become a subscriber to "our" excellent magazine, but lacks the necessary American buck to fulfill this desire. I have quite a bit of trouble getting many of these filthy things in the bag myself. However, I do have a couple that are unattached, so am sending a check.

Kenneth A. Israel, Sodus

Dear Sir: My check is enclosed in the amount of one lousy buck to send Mr. Jones his copy. This is the kind of mutual interest people have across oceans and borders that could bode well for lots more peace than we've got.

William B. Gordon, Old Forge

Dear Editor: I am enclosing a buck. As my wife is British I have a sort of a buoyant feeling for the people of England.

Dr. J. D. Sweet, Chateaugay

Dear Editor: I am enclosing $1. It does my heart good to find someone interested enough in Conservation (as Mr. Jones proves to be) by making this effort to obtain your magazine.

Donald Bain, Argyle

Dear Sir: If you can send *The Conservationist* to Mr. Jones I would be very happy to forward the necessary dollar. This I will consider to be a small charge against the good times my family and I have had vacationing at Fish Creek Camp Site.

Willard Griffith, Syracuse

Gentlemen: We, Bill Fitzner and Burt Laux of the Soil Conservation Service, feel that arrangements should be made for foreign subscriptions. Why not let the rest of the world read it?

We both feel that Mr. Jones should have a subscription and have enclosed the $1 to cover his first subscription.

William Fitzner, Saratoga Springs
Burton Laux, Saratoga Springs

Dear Sir: In my business of buying and selling angling books I have a number of open accounts with British booksellers. I suggest that you send *The Conservationist* for the ensuing year to Mr. Jones and I enclose herewith my check in payment for the subscription. I will request Mr. Jones to remit payment to the bookseller whom I shall designate in a letter to him. The bookseller, on my advice, will credit the remittance to my balance and eventually I will cancel it by purchasing from him. Everybody will be happy. It is as simple as that.

Dan Brenan, Fayetteville

● *When we published the letter from Mr. Jones in our April-May issue, we honestly did not anticipate how our subscribers would rally around. But if we had taken up all the offers of subscriptions (accompanied by cold cash) Mr. Jones and his progeny would be receiving the magazine unto the seventh generation. (The letter we liked most was from a gentleman in Syracuse: It said: "Oh hell. Here's the dollar. Send your sheet to the English Jones."*

Letters printed above are only a sample.

We returned all the cash and checks with thanks, and instead took up Dan Brenan on the proposition outlined in his letter above, since we had a feeling that Mr. Jones would like to pay for the subscription himself, provided there was a way to do it. Mr. Brenan provided the way. And so we thought we had everything settled until this morning (25 May) the following letter arrived:

Dear Sir: In your April-May issue there was printed a letter under the signature, Harold V. Jones and the address merely: Winton, Bournemouth.

I live in Wallisdown, but the district for mail purposes is classed as Winton, and I have recently received mail merely addressed to my namesake. One letter from a Mr. A. F. Hayward, Crystal Spring Farm, Lake Champlain, enclosed a cutting of the letter written to you by Mr. Harold V. Jones. Since then I have been inundated with letters and copies of your magazine—which is rather embarrassing as I am not the person for whom they were intended.

In answer to the quite natural question that will occur to you as to why I opened the letters, the answer is that I opened the first one before I realized that it was addressed to Harold V. Jones, not not to Harold Jones. Having cleared up that point, may I state now that I have made every effort to trace my namesake, but with no success. I can only assume he was merely on holiday in Bournemouth and had no permanent address here, for I can find no trace of him in either the local street or telephone directory. In the telephone directory there was only one person named Jones with the initials H. V., but named person was Hubert V. Jones.

I have made further enquiries since, but Mr. Harold V. Jones seems to be a very elusive person, and I have met with no success. Therefore, rather than return the letters and magazines to the Dead Letter Office, I have taken the liberty of reading the letters and replying to the writers with an explanation.

To obviate having to write more letters of explanation, I wonder if I could say "thank you" to these good people—through you, by a small paragraph in your next issue.

May I say, Sir, how very much such kindness is appreciated, and though I personally have only come into the picture by accident, I feel that all this kindness has been done to me. I know such hospitality and generosity is not foreign to the American nature, for I sampled some of it in 1944 when I was serving as a gunner in the Maritime Royal Artillery and my ship, an oil tanker, tied up at Staten Island and I spent a very enjoyable week in New York, and was nearly overwhelmed with kindness.

No, sir, I have a very soft spot in my heart for all things American and would go out of my way to repay the kindness I was shown, as far as lies in my power. With all good wishes for the continued success of your magazine.

Harold Jones, 29 Bryant Road,
Wallisdown, Bournemouth, England

● *You couldn't get a nicer letter. But now where are we? We think we've made a very small contribution to Anglo-American relations, but not much in delivering our magazine to the people who really want it, especially Mr. Harold V. Jones. His full address, as it appeared on the original letter, is: The Bungalow, Howeth Road, Winton Bournemouth Hants, England. No doubt if we had published this in the first place, along with his letter, we could have saved ourselves and a lot of our subscribers a good deal of trouble. (This issue of the magazine seems to have an extra large number of corrections and confessions.)—Editor*

LEWEY LAKE OUTLET

Dear Editor: With so many interesting articles in every issue, of *The Conservationist*, will you please accept a picture of Lewey Lake Outlet. I took this picture from the bridge, and think it shows how desolate a scene it can present, without much water.

Mrs. Rhea Klose, Johnstown

● *Water levels here are controlled by the Hudson River Regulating Board.—Editor*

CREDITS

Cover, pages 20, 21, J. D. Hill; second cover, 34, Nick Drahos; 1, Wayne Trim; 2, N. Y. S. Commerce Dept.; 4, Aberdeen, Scotland Press & Journal; 8, Clayt Seagears; 9, 29, David G. Allen; 10, W. J. Hamilton, Jr.; 14, 32, Earl McGuirk; 16, Herbert Buckley; 18, Homer D. House, N. Y. S. Museum; 22, Miner's "Field Book of Seashore Life"; 23, Ellen Edmonson; 24, fourth cover, L. A. Fuertes; 25, John D. Gould; 30, Dave Cook.

Words on Woodpeckers

THIS piece relates mostly to woodpeckers, those amazingly specialized birds who never say anything with tongues in their cheeks. Reason for this is simple: The tongues are too long to fit.

Woodpeckers deserve far more attention than they get. They are essentially do-gooders—all except one kind, the yellow-bellied sapsucker, which has some bad habits plus a tongue with a swab on the end of it to help it be bad. We will see about this later.

Most of the nine kinds of woodpeckers here in New York are pretty rare. Only two are reasonably common. These are the downy woodpecker, which is by far the smallest and friendliest, and the flicker, which should come with every package of lawn grass seed.

Most farm boys do not know what a flicker is. But they know what is a high hole. They are the same.

The Conservation Department is, of course, asked constantly to identify many kinds of living things. By far the most common description given for the unknown bird fits the flicker. Reason for this is that it is large, strikingly colored and often is seen hopping around lawns, city or country, like a robin. It is after ants.

Once I watched a flicker sitting on an ant hill in the back lawn. Apparently it was motionless. But binoculars showed its tongue flickering in and out several times per second. Obviously each flicker flicked an ant into the flicker. In a minute I could tell he literally had the ant hill licked.

Anteaters, those strange toothless animals with snouts like kitchen faucets, have long tongues covered with sticky stuff which slup up the ants (along with a bunch of junk which comes with the insects). But anteaters' tongues aren't two shakes alongside woodpeckers' tongues, even with the glue dividend.

Many kinds of insects have long tongues which curl up like watchsprings during their spare time. But they have to hang outside and thus are subject to considerable wear and tear. Toads and frogs have tongues which are fastened in front of the mouth so that the business or front end of the tongue (which has a kind of goo on it) tickles the tonsils when at ease. When a bug or something gets within range (which is about two inches from a fair-sized toad's snoot), he opens his mouth and the tongue rolls out—splat!

Many other animals have long specialized tongues—like the giraffe which can curl his around a whole slug of leaves like a hand. Then there's the fruit-eating bat which not only has a long tongue but a brush on the end of it to help with his pulp-slupping. The forked tongues of snakes dart out of a sheath and act as radar devices. Beef tongue is probably in your ice box.

But the tongue of the woodpecker is the prize. It is hard-ended, pointed and equipped with barbs like a porcupine's quill. Because it usually is twice longer than the bird's head, it naturally must bend and go some place beyond its mouth. It does just that. It bypasses the gullet and bends upward over the skull in its own case—a double case in fact—for the tongue's rear end separates into a pair of hawsers which end up at the base of the upper bill. Special muscles make all this stuff protrusive. So when the woodpecker sticks out its tongue, it really has something there. Thus the bird is able to feel around under the bark with its tongue and spear bugs in very handy fashion after first having paved the way with a quick belt of its chisel-shaped beak.

The sapsucker, like the fruit-eating bat, has a brushy tongue-tip for slurping sap which preliminary rounds of hole-making have caused to flow. Sapsuckers sometimes get quite drunk on fermented sap and stagger around on the ground. They fall there after the first stagger on the tree.

Woodpeckers have two toes in front and two behind. These are equipped with long needle-sharp claws. Thus equipped, the woodpecker grabs the bark like a set of double-jointed ice tongs and is set in any position on a tree trunk, head up or down. The rather rare three-toed woodpeckers are found mostly in the Adirondack spruce forests. They only have three toes, which merely proves that woodpeckers don't have to have four.

Woodpeckers have a dozen tail feathers. They are all stiff and act exactly like a telephone lineman's spikes when he leans back on his safety belt.

When you hear a long, rolling tattoo from a woodpecker, he isn't chopping. The bird experts have figured out he's merely drumming like a ruffed grouse. It's both a mating song and a warning against avian trespassers on the home feeding or nesting area.

When the woodpecker is at work chiseling a home he sits there hour after hour chipping away. Next to the big pileated (the cock of the wild woods) the hairy woodpecker is presumed the best chopper. But all do right well. The hairy's home may be in a live tree with a two-inch hole leading to a cavern a foot or more deep. Try that one with your ice pick and see how long it takes.

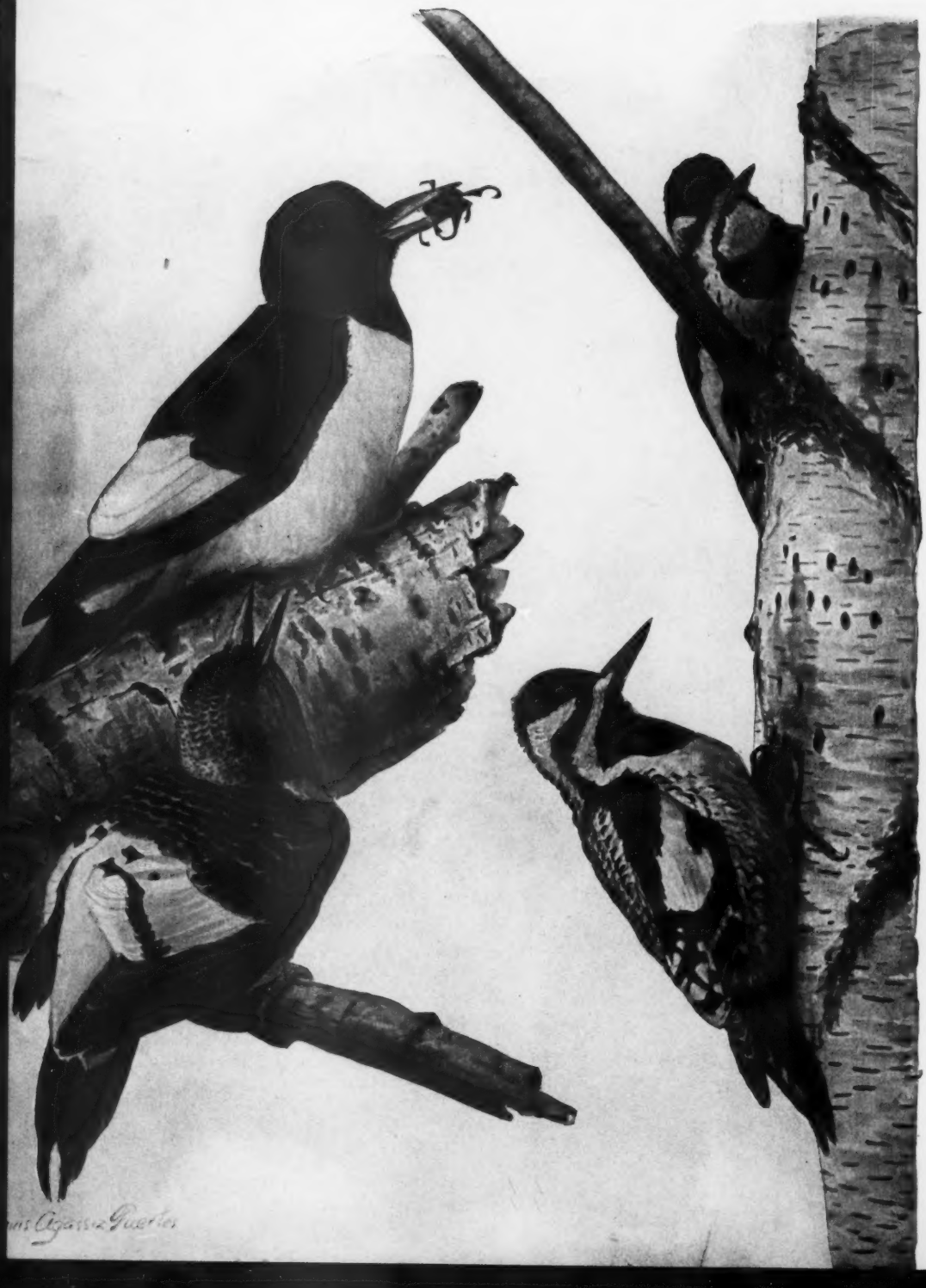
The woodpecker, it should be mentioned, is the woodchuck of the birds. The 'chuck digs the hole used by cottontails, skunks and the like. The woodpecker (especially the pileated and the flicker) is the home-builder for squirrels and many birds, even the woodduck and the whistler.

THE red-headed woodpecker is the laziest builder, shunning the hardwood of the living tree. He picks out something dead—even a telephone pole. He is also the most pugnacious and spends a lot of time chasing other birds from the homestead area. He also has the longest scientific name—a combination of Greek words—*Melan* (black) *erpes* (creeper) *erythro* (red) *cephalus* (head)—*Melanerpes erythrocephalus*. It must be especially hard on a woodpecker to have a tongue-twisting name like that.

The rare red-bellied woodpecker doesn't have a red belly. But why let that disturb us. Our own thickly-feathered national bird is called the bald eagle.

—CLAYT SEAGEARS

Red-headed Woodpecker 9½"
Pileated Woodpecker 18"
Downy Woodpecker 6"
Red-bellied Woodpecker 9½"
Hairy Woodpecker 9"
Black-backed Woodpecker (arctic 3-toed)
Males of those two have yellow on crown instead of usual red
Three-toed Woodpecker 8½"
9½"
Sapsucker 8½"
Flicker 13"
This one belongs on the tree, too, but it's equally at home hopping after ants on the lawn
These relatives are all same relative size --- from the crow-sized Pileated to the 6-inch Downy.
Bird measurements are from tip of bill to end of tail.
TONGUE
Ant about to leave via flicker of tongue
Our Woodpecker Family's Tree
CLAYT SEAGERS



RED-HEADED WOODPECKE
Melanerpes erythrocephalus
Adult
Immature

All ½ nat. size

YELLOW-BELLIED SAPSUC
Sphyrapicus varius varius (L
Female
Male

Courtesy
N. Y. S. Museum